

Volume 41

Number 12

MECHANICAL ENGINEERING

THE JOURNAL OF THE AMERICAN SOCIETY
OF MECHANICAL ENGINEERS

UNIVERSITY OF ILLINOIS LIBRARY

JAN 5 1920

A. S. M. E. Affairs

DECEMBER-1919

PUBLISHED MONTHLY BY THE SOCIETY
29 WEST 39TH STREET, NEW YORK, U.S.A.

Coming Section Meetings

New Orleans Section.

December 8: At Louisiana Engineering Society. Subject to be announced.

Philadelphia Section.

December 15: Joint meeting with American Society of Heating and Ventilating Engineers, at Philadelphia Engineers' Club. Oil as a Fuel, by Henry Thomas, of the Sun Company, and E. H. Peabody, Vice-President of Babcock & Wilcox Co., Philadelphia.

St. Louis Section.

December 19: At the St. Louis Engineers' Club. Subject to be announced.

Atlanta Section.

December 23: Place and subject to be announced.

Cleveland Section.

December 23: Rooms of the Cleveland Engineering Society, Hotel Statler. Subject to be announced.

Boston Section.

December (exact date to be announced): Inspection of the Watertown Arsenal; dinner; paper on the Heat Treatment of Metals.

Indianapolis Section.

Every Thursday: Luncheon meeting at the Sciencetech Club.

San Francisco Section.

Every Thursday: Luncheon meeting at the San Francisco Engineers' Club.

New York Section.

The Section wishes to call to the attention of members outside of New York its welcome to them at all meetings, and its willingness to place their names on the New York mailing list, upon request.

The Secretary's Trip South

The members of the American engineering societies in Cuba have formed a society of their own, and invited the secretaries of the Four Founder Societies to address a general meeting of the engineers of Cuba on the evening of December 9. Secretary Rice represented our Society and will include in his itinerary visits to a number of Southern cities where the rapidly growing industries give promise of the early establishment of Local Sections. The itinerary follows:

December 9: Havana, Cuba
December 14: Savannah, Ga.
December 15: Charleston, W. Va.
December 17: Chattanooga, Tenn.

December 18: Nashville, Tenn.
December 19: Louisville, Ky.
December 20: Youngstown, Ohio
December 22: Harrisburg, Pa.

December 23: Scranton, Pa.

SOCIETY AFFAIRS

Affairs of Interest to the Membership — Secretary's Letter — Council Notes — Section Meetings —
Personals — Employment Bulletin — Candidates for Membership

Secretary's Letter

The best piece of news of the month is the announcement by the American Institute of Mining and Metallurgical Engineers that Mr. Hoover has accepted the nomination for the Presidency of the Institute next year.

Your Secretary was privileged to be at the little dinner at which Mr. Hoover was present when this announcement was made. Mr. Hoover in responding, stated his whole-hearted belief in the capacity of the engineers to help solve the present industrial difficulties if only their method in ascertaining facts was employed. He said in substance that if we had all of the facts it would not take a great intellect to apply the remedy.

The assumption of office in any of the National Engineering Societies by devoted and capable men like Mr. Hoover brings great credit to the other engineering societies and to the profession, and we all shall benefit by his splendid example and leadership.

Dr. W. M. Best, Mem.Am.Soc.M.E., has just sent out a card quoting from Dr. Oliver Wendell Holmes and then adding his own comments. Among the quotations from Dr. Holmes is:

Success is the result of a mental attitude, and the right mental attitude will bring success in everything you undertake. Men who succeed have faith in themselves and faith in their fellows.

Then Dr. Best adds among other quotations:

A gentleman is one who keeps his promises, made to those who cannot enforce them. This day I will live as becomes a man; I will be filled with good cheer and courage. Be a friend to all—stand by all—speak well of all. Before you can manage men, you must learn to manage yourself.

The other day I was reading somewhere that "the City of Happiness is located in the State of Mind."

The relation of all this to us as engineers is that we should bring about a normal condition in society today through our wonderful capacity for analysis of the causes for unrest and put our own selves right, and then proceed to help every one else to put his attitude right toward each other and the world.

If, therefore, every member of each of the engineering societies should undertake to put himself right, think of the power that we could exert in helping solve the various situations that need to be solved at the present time!

As it always helps to have leaders express definite opinions, the Society at its Annual Meeting this month had two or three of the leaders of thought in America give addresses on the industrial situation. There was one of the most complete technical programs in addition, a comprehensive account of which will appear in the January issue of MECHANICAL ENGINEERING.

CALVIN W. RICE,
Secretary.

Council Notes

A meeting of the Council was held at the Claypool Hotel, Indianapolis, Ind., October 24 and 25, in connection with a meeting of the Mid-West Sections of the Society under the auspices of the Indianapolis Section. There were present: *President* M. E. Cooley, presiding; *Vice-Presidents* Max Toltz, Fred R. Low; *Managers* William B. Gregory, D. Robert Yarnall, Charles Russ Richards, Robert H. Fernald, Frank O. Wells; *Past-President* Ira N. Hollis; *Chairmen of Standing Committees of Administration*, Wilson E. Symons, *Finance*; D. S. Kimball, *Meetings and Program*; Geo. A. Orrok, *Publication and Papers*; Arthur M. Greene, Jr., *Chairman Research Committee*. L. E. Strothman, one of the

Society's representatives on the National Industrial Conference Board, L. C. Nordmeyer, Chairman of the St. Louis Local Section, C. H. Benjamin, Arthur L. Rice, Chairman of the Chicago Local Section, and S. N. Castle were present by invitation, and Calvin W. Rice, *Secretary*.

Executive Committee Meetings. Minutes of all Executive Committee meetings held during the summer were approved.

Aims and Organization Committee. The report of this committee and the report of the Joint Conference Committee of the Founder Societies were received and ordered printed and distributed to the membership in pamphlet form previous to the Annual Meeting. The committee was discharged with an expression of the Council's appreciation of its work. The Society's present four representatives, L. C. Marburg, D. S. Kimball, L. P. Breckenridge and E. S. Carman, on the Joint Conference Committee, were continued until the close of the Annual Meeting.

James Watt Centenary. J. Wilfrid Harris, H. F. L. Orcutt, R. Stanford Riley and W. E. Symons were approved as Honorary Vice-Presidents representing the Society at the exercises in Birmingham, September 16 to 21.

Permanent Franco-American Committee. Charles T. Main and George W. Fuller were approved to represent the Society on the Permanent Franco-American Engineering Committee.

STANDING COMMITTEES ON ADMINISTRATION

The annual reports were received and ordered printed for distribution at the Annual Meeting.

Finance Committee. The recommendations of the Finance Committee as embodied in the report of this committee published elsewhere in this issue were approved.

Meetings and Program Committee. Upon recommendations jointly of Meetings and Program Committee, House Committee and New York Section Executive Committee Rule 13 was amended to read:

R. 13 (a) The features of the program outside of the professional and business sessions at any meeting of this Society in any city shall be in charge of a committee appointed or designated by the Meetings and Program Committee.

R. 13 (b) The conduct of the professional and business sessions of the Society shall be in charge of presiding officers and assisting committees, appointed by the Meetings and Program Committee with the advice and consent of the President.

The President was authorized to appoint a committee of three for the purpose of drafting rules for conduct of meetings of the Society and its sections, and to report back to the Council, it being understood that this committee take into consideration the present rules of the Society.

Publication and Papers Committee. The Council accepted and approved the recommendations of the Publication Committee, which were requested by the Aims and Organization Committee, that MECHANICAL ENGINEERING be encouraged to publish matter of broader scope, including papers and articles that have not been presented at any meeting of the Society, news items of engineering interest, and information of general interest now presented in bulletins.

Commencing January 1, 1920, the annual subscription rates for MECHANICAL ENGINEERING were ordered to be as follows:

Members	\$3.00
Non-members in United States	4.00
Non-members in Canada	4.50
Non-members in Foreign Countries	5.00

It was further ordered that notice be given of the amendment of all By-Laws and Rules that may be affected by the above change in rates.

Membership Committee. The following members who have paid dues for 30 years and reached the age of 70 years were declared members without dues:

Albert de Verastegui
W. E. Elliott
Francis L. Hand
Edward I. H. Howell
Franklin F. Krous

Albert K. Mansfield
Walter Miller
H. B. Reelker
J. H. Vaile
L. D. York

The following members who have paid due for 35 years were declared members without dues:

Charles S. Barnaby
W. H. Bone
S. J. Clarke
M. E. Cooley
Geo. N. Cullingsworth
Henry A. DuVillard
E. C. Felton
A. O. Frick
A. E. Hammer
John Henney
Ira N. Hollis

O. W. Kelly
C. A. Knight
Jas. B. Ladd
Wm. T. Magruder
T. J. Mirkil, Jr.
Thos. F. Rowland, Jr.
Peter Schwamb
Erwin W. Thompson
Lyman A. Upson
F. N. Willson

Local Sections. Recommendations of the Committee on Local Sections with respect to petitions from Portland, Ore., and Seattle, Wash., were approved and the petitions granted.

Upon request of the Associated Engineers of Spokane, exchange of courtesies was granted.

Amendments to Constitution and By-Laws. Notice was given of proposed amendments to the Constitution and By-Laws as contained in report of the Constitution and By-Laws Committee to be distributed at the Annual Meeting.

STANDING COMMITTEES

The annual reports were received and ordered printed and distributed at the Annual Meeting.

PROFESSIONAL AND SPECIAL COMMITTEES

Boiler Code Committee. Interpretations Nos. 243, 244, 247 through 256, were received and ordered printed in MECHANICAL ENGINEERING.

Power Test Code Committee. The report of Committee on Power Test Codes was received and ordered printed for distribution at the Annual Meeting.

Upon recommendation of the committee, the following appointments were made: J. O. Lewis, on the Sub-Committee on Fuels; Hans Dahlstrand, on the Sub-Committee on Steam Turbines; and Walter A. Hall (representing R. H. Rice of the General Electric Company, as additional member on Sub-Committee on Centrifugal and Turbine Compressors.

International Standard for Pipe Threads. Upon the recommendation of the Committee on International Pipe Threads, the following appointments to the International Convention to be held in Paris November 10, 1919, were made: *Official Delegate*, Laurence V. Benet; *Technical Advisers*, Stanley G. Flagg, Bryant H. Blood, Arthur M. Houser, F. Hugh Morehead, Thomas Patterson, Julian E. Stark and Charles D. Terry.

Relations with Colleges. The Council received the reports on Junior and Student Prizes, and approved the recommendations as to the award of these prizes as contained in that report.

Hutton Memorial. The President was authorized to appoint additional members to the committee to make arrangements for the unveiling of the Hutton Memorial. The President subsequently appointed Mr. Worcester R. Warner and Mr. H. H. Suplee.

APPOINTMENT BY PRESIDENT

Code of Ethics. The President announced the following Special Committee on Code of Ethics to report at the Annual Meeting: Messrs. A. G. Christie, *Chairman*, H. J. Hinchey, J. V. Martenis, R. Sibley and C. T. Main.

JOINT ACTIVITIES

American Engineering Standards Committee. The Constitution of the American Engineering Standards Committee, dated August 16, 1919, as presented by the representatives of the Society on that Committee was approved.

National Industrial Conference Board. A committee consisting of F. J. Miller, *Chairman*, Walter S. Russel, H. B. Sargent, Charles L. Newcomb and L. H. Strothman was appointed to investigate the functions of the National Industrial Conference Board, the kind of questions it takes up and the desirability of our remaining a member of the board. This committee was also requested to report on general policy of membership in other organizations.

Industrial Conference called by U. S. Government. Ira N. Hollis, *Chairman*, Fred R. Low and Max Toltz were appointed by the President to draft a telegram to President Wilson, suggesting that he recognize engineers in his meeting in Washington to discuss industrial conditions. This committee submitted the following telegram:

At the convention of the American Society of Mechanical Engineers in session today in Indianapolis, the Council of the Society resolved to respectfully suggest representation from the engineering profession in the Industrial Conference. The Society ventures to hope that members of the engineering profession, having so many points of contact with labor and capital, are qualified to serve for the public and may be placed in a position to contribute their service to their country in this difficult period of readjustment. They respectfully nominate James E. Sague, Poughkeepsie, N. Y., former member of the State Public Service Commission, and Charles L. Newcomb of Holyoke, Mass.

Copies were sent to the Engineering Council, with the request that their officers use every means to secure the adoption of the spirit of the above resolution.

Vote of Thanks. The Council expressed its sincere appreciation to the Executive Committee of the Indianapolis Local Section for their specially felicitous Joint Indianapolis Meeting, and to all individuals who worked toward the success of the meeting.

Adjournment was taken to meet in New York on Monday, December 1, at 10 A. M., in connection with the Annual Meeting.

CALVIN W. RICE,
Secretary.

What is Going On

A special committee composed of Major Fred J. Miller, *Chairman*, Walter S. Russel, Henry B. Sargent, L. E. Strothman and Charles L. Newcomb has been appointed to investigate the question of the Society's membership in and affiliation with other bodies. The committee will first inquire into the subject of the Society's membership in the National Industrial Conference Board.

The Society is in receipt of an invitation to assist a commission of Swiss engineers who will visit this country in the forthcoming spring. This is the kind of request now frequently made, both by correspondence and by almost daily calls at the headquarters from gentlemen from foreign countries who are visiting this country.

The Engineering Council has made an appeal for funds, and it is strongly urged that members of the Society familiarize themselves with the aims, purposes and scope of work of the Council. The New York office of the Council is on the sixteenth floor of the Engineering Societies' Building, and Mr. A. D. Flinn, secretary, is always in attendance.

The Engineering Council announces that its efforts to have President Wilson appoint an engineer on the Second Industrial Conference, which he is expected to call, has apparently met with success.

The secretaries of three of the national societies arranged for a "get-together" meeting of engineers in Havana, Cuba, on Tuesday, December 9. Quite a large number of American engineers spend seven or eight months of the year in Cuba and there are also a number of engineers resident in the country, both English and native, as well as American, so that altogether it is believed there is a great opportunity for developing local organization activities on the island.

The Bureau of Standards has called a conference in Washington on December 8, "to further consider the methods of procedure in work on Safety Codes and methods for securing the coöperation of interested persons and organizations. The Conference is first to make a survey of the subject now covered by the Industrial Safety Code and the extent to which these codes are used; that is, the number of States who have adopted them, and the extent of their use in industry."

Inter-Professional Conference

The Inter-Professional Conference, organized at the invitation of the Post-War Committee on Architectural Practice of the American Institute of Architects to bring the professions together in order to plan more effective relations to each other and to the social problems of the day, convened in Detroit, Mich., on November 28 and 29.

At this meeting representatives of the various professions were brought together to discuss the desirability of forming a permanent national conference organization. The program of the discussion was divided into three parts: (a) Professional organizations, their functions and inter-relations; (b) Relation of the profession to the public; (c) Educational obligations of the professions.

The methods suggested for putting into effect the permanent national conference organization was through the establishment of inter-professional conference groups in the communities through the country, which local groups would be brought together annually through delegates.

A more complete report of the conference, in which Mr. Calvin W. Rice, secretary of this Society, participated as a member of the voluntary committee, will be given in a later issue.

The complete personnel of the Volunteer Committee on Organization was published in MECHANICAL ENGINEERING, Part 2, for November.

Cleveland Section Patent Committee Report

The following report of the Patent Committee of the Cleveland Section of the A. S. M. E. has been sent to all the other sections of the Society in the hopes of arousing sufficient public interest to secure an improvement in patent-office methods along the lines indicated in the report:

We favor the passage of legislation based upon the recommendations of the National Research Council and embraced in the following three bills:

H. R. 5011: Provides for the separation of the Patent Office from the Interior Department and its establishment as an independent bureau. This bill, if made a law, would take the Patent Office out of the position of one of a number of inconspicuous bureaus in a great Department, and set it forth in its proper light as one of the really important branches of the government, exercising a vast influence upon the material and industrial prosperity of our people. It is believed this change would greatly extend the activities of the Patent Office with a resultant stimulation of invention in various lines.

H. R. 5012: Provides for a Single Court of Patent Appeals. The purpose of this court is to shorten the processes of patent litigation and to unify the decisions rendered in patent cases.

H. R. 6913: Provides for increases in personnel and in the salaries paid in the Patent Office. This legislation is necessary owing to present outside competitive conditions, in order to obtain and retain the services of competently educated men as examiners. Good men are resigning to take positions with big industrial firms paying large salaries. The Patent Office has long been working without a sufficient force of competent men; its work is consequently in arrears, and the work is done too hastily to be reliable. The bill provides for a considerable increase in the working forces, and fixes a range of salaries for examiners, running from an entrance salary of \$1800 up to \$4000 for Primary Examiners with corresponding increases for higher officers.

We earnestly recommend approving action by other engineering bodies and that the American Society of Mechanical Engineers use their best efforts to further this legislation.

H. C. GAMMETER,
A. J. HUDSON,
A. G. MCKEE,
J. B. MERIAM,
H. J. SMITH.

French Engineering and Economic Commission

The French Engineering and Economic Commission, now touring this country with the Commercial Mission from Overseas which participated in the International Trade Conference held at Atlantic City on October 20-22 under the auspices of the Chamber of Commerce of the United States, visited New York City on November 20-24.

A reception committee consisting of the following gentlemen was appointed to receive them:

A.S.C.E.	Nelson P. Lewis
	George H. Pegram
A.S.M.E.	John W. Lieb
	Alexander C. Humphreys
A.I.M.E.	Charles F. Rand
	George D. Barron
A.I.E.E.	Prof. Walter I. Slichter
	L. B. Stillwell
A.C.S.	Dr. Wm. H. Nichols
	Harris Bewker
A.I.C.E.	L. H. Baekeland

This committee acted as members of the General Local Committee appointed by the Merchants Association of New York City on the request of the United States Chamber of Commerce.

Arrangements were made by the Committee for the party to inspect the Engineering Societies' Building.

The Mining and Metallurgical Engineering Society of America tendered a dinner to M. Eugene Schneider, which the national engineering societies were invited to participate. The occasion was the presentation of the Society's gold medal to M. Schneider.

M. de Freminville and M. Collin, both engineers at the Creusot Works, were members of the French Mission.

Section Meetings

ATLANTA:

October 28. Smoke Conditions in Atlanta, by Cecil P. Poole, City Mechanical Engineer. Department of Public Works, by Earl F. Scott.

November 24. A Broader Field for the Engineer, by Dean Dexter S. Kimball, Cornell University.

BALTIMORE:

November 13. Some Problems of the Canning Industry, by J. C. Talliaferro, Continental Can Company. Recovery of Oils as By-products of the Canning Industry, by Dr. J. H. Shrader, U. S. Department of Agriculture.

BIRMINGHAM:

October 11. Excursion to Fairfield Works, Tennessee Coal, Iron and Railroad Company, followed by dinner.

November 22. A Broader Field for the Engineer, by Dean Dexter S. Kimball, Cornell University.

BUFFALO:

October 6. Our Country's Call to Engineers, by President M. E. Cooley.

CHICAGO:

October 21. The Proposed \$29,000,000 bond issue for Chicago.

October 29. Power Supply for the Future, by J. A. Steinmetz, Janney, Steinmetz & Co.

CLEVELAND:

November 25. The Open Court Trial of Patent Cases.

CONNECTICUT:

HARTFORD

October 20. The Engineering Problems Involved in the Distribution of Water in the City of Hartford, by Caleb M. Saville, Chief Engineer of the Board of Water Commissioners.

MERIDEN

November 7. Conflicting Claims on Piston Rings, by Maurice A. Michaels, Development Engineer, Foster Merriam & Co. The Manufacture of Shot Guns, by Walter A. King.

November 21. The Application of the Vacuum Tube to Radio Telegraphy, by Harold P. Donle, Radio Engineer, Connecticut Telephone and Electric Company.

NEW HAVEN

October 16. Industrial and Technical Points of the Rubber Industry, by Charles R. Haynes, U. S. Rubber Company.

CONNECTICUT SECTION MEETING:

November 19. 2.30 P. M., The Motor Truck in War, illustrated by slides and motion pictures, by Col. F. H. Pope, Motor Transport Corps, and Lieut.-Col. Arthur J. Slade.
6.00 P. M., Dinner.
7.30 P. M., The Motorization of the World's Traffic, by Kingsley G. Martin.

EASTERN NEW YORK:

October 27. Dinner and talk by E. W. Rice, Jr.

MID-CONTINENT:

October 30. 10.30 A.M., Report of Committee: What Should be the Content of a Course to Fit Young Men to become Petroleum Engineers?
12.00 M., Luncheon.
2.00 P.M., Construction and Operation of Pipe Lines for the Transportation of Natural Gas, by C. E. Brock, Superintendent, Gas Pipe Lines of the Empire Gas and Fuel Company. A Standard for Gasoline, Kerosene, and Motor Fuel Oil, by Dr. Edwin De Barr, University of Oklahoma. Problems Confronting the Engineering Colleges, by Professor A. A. Potter, Dean, School of Engineering, Kansas State Agricultural College. Effect of Compressed Air or Gas on the Production of Petroleum Wells, by W. S. Smith, Miller Gas Engine Company.
6.00 P.M., Dinner.
8.00 P.M., New Problems for Engineers, by Dr. Ira N. Hollis, Past President A.S.M.E. Natural Gas Gasoline Plants, by F. E. Rice, Chief Engineer, Phillips Petroleum Company. Appraisal of Oil and Gas Properties, by O. J. Berend, Vice-President Oklahoma Petroleum and Gasoline Company.
October 31. Inspection trip by automobile.

MINNESOTA:

November 3. The Preparation and Use of Powdered Coal, by Alonzo B. Kenyon.

NEW YORK:

October 9. The Human Factor in the Operation of Industry, by Prof. Henry R. Seager, Columbia University.
November 26. Management in Relation to Capital and Labor, by E. W. Hulet, Vice-President and General Manager White Motor Car Company.

ONTARIO:

November 14. Informal talk by Brig.-Gen. C. H. Mitchell.

PHILADELPHIA:

November 25. Smoker. Illustrated paper on colored photography, by Henry Hess. Informal talk by Joseph A. Steinmetz, President Philadelphia Engineers' Club.

ST. LOUIS:

October 15. Address by Dean Dexter S. Kimball, Cornell University.
October 16. Industrial Medicine, by Dr. Otto P. Geier, Cincinnati Milling Machine Company.

SAN FRANCISCO:

October 23. Flow of Oil in Pipe Lines, by Dr. W. F. Durand, Leland Stanford, Jr., University. Oil Pipe Line Design and Economics, by Herbert W. Crozier.

WASHINGTON:

November 19. Joint meeting under the auspices of the Society of Washington Engineers.

WORCESTER:

September 30. Methods of Sewage Disposal, by Harrison P. Eddy, Metcalf & Eddy (Illustrated).
October 28. Costs from Any Angle, by William R. Bassett, Miller, Franklin Bassett Company.

Eastern New York Section Has Its First Meeting

The first meeting of the newly organized Eastern New York Section of the A.S.M.E., which was held on the evening of October 28 in the Edison Club auditorium, Schenectady, N. Y., was exceptionally well attended and a highly successful one. This local branch of the Society is composed of members from Schenectady, Albany, Troy, Cohoes, Ballston, Amsterdam, Johnstown and Gloversville.

Mr. H. G. Reist of the alternating-current department of the General Electric Company presided. The principal speaker of the evening was Mr. E. W. Rice, Jr., president of the General Electric Company, who took as his subject "Present-Day Problems." Although an electrical engineer himself, Mr. Rice quoted

Lord Kelvin's statement that "electrical engineering is 90 per cent mechanical engineering," to prove that he felt entirely at home at the installation of a local chapter of mechanical engineers.

Mr. Rice spoke of the remarkable opportunities for useful service that existed in the city of Schenectady for just such a local section, giving as the reason the amount of mechanical work done by the two large companies located there, the American Locomotive Company and the General Electric Company. He believed it especially appropriate that a forum and a rallying place for the mechanical engineers be started. He pointed out that it was quite unnecessary for him to indicate the lines along which progress is still possible in the field of mechanical engineering, but he ventured to take a short time in which to consider some of the problems which the world is facing largely as the result of the engineer's contributions to mankind. Mr. Rice went on to speak more specifically of remedies for these problems, and this part of his address appears in Section One of this issue.

PERSONALS

In these columns are inserted items concerning members of the Society and their professional activities. Members are always interested in the doings of their fellow-members, and the Society welcomes notes from members and concerning members for insertion in this section. All communications of personal notes should be addressed to the Secretary, and items should be received by January 15 in order to appear in the February issue.

CHANGES OF POSITION

WALTER C. LANGE has left the employ of the Doehler Die Casting Company, of Brooklyn, and is now a member of the engineering staff of the Hammel Oil Burning Equipment Company, New York.

HUBERT E. BAKER has resigned as chief draftsman, Manning, Maxwell and Moore, Inc., Shaw Crane Works, Muskegon, Mich., and is now connected with Alfred Box and Company, Inc., Philadelphia, Pa., as chief engineer.

GEORGE H. STEGMANN has resigned from the engineering department of the Individual Drinking Cup Company, New York, where he had been machine designer, and has accepted the position of mechanical engineer with Dwight P. Robinson and Company, New York.

F. RAYMOND JACKSON has severed his connection with the office of Gilbert C. White, consulting engineer, Durham, N. C., and is now associated with E. S. Player, of Greenville, S. C., manufacturing agents, selling power plant machinery and specialties.

H. C. ACKERMAN, formerly with the Gorham Manufacturing Company, Providence, R. I., as mechanical superintendent of their hand-grenade plant, has taken the position of master mechanic of the By-Product Coke Plant of The Colorado Fuel and Iron Company, Pueblo, Colo.

JOHN F. ALLISON has become secretary, treasurer, and works manager of the Spotswood-Allison Manufacturing Company, Petersburg, Va. He was formerly with the University of Pennsylvania, Philadelphia, Pa.

JAMES A. WILLARD, formerly chief draftsman of the Hopewell, Virginia Works, of the DuPont Company, has become associated with the Central Axle Company, Division of General Motors Corporation, Detroit, Mich., in the capacity of chief tool designer.

H. C. SHIELDS has resigned his position as western sales engineer for the Fuller Engineering Company and Fuller-Lehigh Company, and has been elected vice-president and general manager of the Arkansas Portland Cement Company, a new corporation recently formed in Arkansas.

JOSEPH H. HAZLEY, who for the past eight years has had charge of the eastern territory of Wilmarth and Mormon Company, Grand Rapids, Mich., in the capacity of sales engineer, service man, etc., has resigned and has become associated with the Jacobs Manufacturing Company and Rhodes Manufacturing Company, of Hartford, Conn., manufacturers of chucks and shapers.

A. H. MITCHELL has resigned from the Taft-Peirce Manufacturing Company, of Woonsocket, R. I., effective November 1, and is now associated with H. W. Cotton, Inc., of Brooklyn, N. Y., as second vice-president and sales manager.

CHARLES W. GUSTAVUS, whose work as construction engineer on the new south yard of the New York Shipbuilding Corporation, Camden, N. J., has been completed, has become connected with the construction department of the Detroit Edison Company, as mechanical engineer.

MANNING E. RUPP has resigned as general superintendent of the Gifford-Wood Company, Hudson, N. Y., and has accepted the position of sales engineer and assistant works manager with the P. B. Yates Machinery Company, Beloit, Wis.

E. L. CONSOLIVER resigned his position as assistant professor of mechanical engineering at the University of Wisconsin. Extension Division, to accept the position of director of the Department of Automotive Electrotechnics, School of Engineering of Milwaukee, Milwaukee, Wis.

CHARLES F. SCRIBNER has become associated with the Business Service Corporation of America, Chicago, Ill., in the capacity of vice-president and chief engineer. He was formerly consulting engineer for L. V. Estes, Inc., Chicago, Ill.

ALBERT S. BURRILL, until recently with the Marlin-Rockwell Corporation in its Tacony, Philadelphia, plant, has accepted a position as mechanical engineer with the Burroughs Adding Machine Company, Detroit, Mich.

GEORGE R. WOODS, who recently resigned from The Allied Machinery Company of America, New York, has been appointed manager of the New York office of R. S. Stokvis and Zonen, Ltd., of Rotterdam.

JAMES R. MCCALLUM has resigned his position as chief engineer with the tractor division of the Militor Corporation, Springfield, Mass., to accept a position as designing engineer with the Ordnance Engineering Laboratory at the Holt Manufacturing Company, Peoria, Ill.

CAPTAIN A. B. CHRISTEN, who before the war was an engineer with the Western Electric Company, has joined the sales department of the Anti-Corrosion Engineering Company of New York City.

EDWARD R. ABBOTT has joined the sales force of H. W. Cotton, Inc., of Brooklyn, N. Y. He will have charge of the western business, making his headquarters for the present in New York City, and later at Cleveland, Ohio. Mr. Abbott was formerly with the Taft-Peirce Manufacturing Company, of Woonsocket, R. I., as a member of the sales force of their New York office.

ANNOUNCEMENTS

DUGALD C. JACKSON and E. L. MORELAND announce that after their absence in France in the Corps of Engineers, U. S. A., they have resumed their practice as consulting engineers, under the firm name of Jackson and Moreland, with offices in Boston, Mass., and will carry on the practice formerly conducted in association with William B. Jackson under the firm name of D. C. and William B. Jackson.

JOHN E. TAYLOR, Master Engineer Senior Grade, Headquarters Transportation Corps at Large, A. E. F., who served in France as general supervisor of air brakes of the 14th Grand Division of the U. S. Railways, has been honorably discharged and has returned to his work with the Locomotive Superheater Company, New York.

WILLIAM D. ENNIS has been designated a consulting member of the technical advisory committee of the War Claims Board. This Board has been designated to act for the Secretary of War in the settlement of claims arising from the suspension of contracts following the armistice.

CHARLES W. TUBBY, formerly St. Paul sales manager, Worthington Pump and Machinery Corporation, has been transferred to the management of the Seattle office of the company.

MARK T. CANTELL, consulting engineer of Winnipeg, Manitoba, Canada, has been elected to membership in the Royal Societies Club, London, England, by reason of his contributions to the science of engineering.

HARRY HIMELBLAU has started a consulting engineering practice, in addition to his duties as mechanical engineer with the Armour Grain Company, Chicago, Ill.

WALTER P. ALEXANDER, Captain, Inspection Division, Philadelphia District, Ordnance Office, is in charge of the newly opened branch office of Starkweather and Broadhurst in Springfield, Mass. He will handle the business of the company in western Massachusetts and vicinity.

JEROME STRAUSS, First Lieutenant, Ordnance Department, Inspection Division, is now assistant chief chemist and metallurgist, U. S. Naval Gun Factory, Washington, D. C., in charge of chemical and metallurgical laboratories.

BERNARD O. KNIGHT, after two years of engineering activities with the Air Service, both in Washington, D. C., and Dayton, Ohio, has resigned to become designing engineer for the G. A. Gray Company, manufacturers of metal planers, Cincinnati, Ohio.

ROLAND F. HETZEL is now in charge of the castings department of the Ames Shipbuilding and Drydock Company, Seattle, Wash.

J. BENTON PORTER, ship propulsion specialist, announces that he has been transferred from the Philadelphia office to the New York office of the General Electric Company.

CLARENCE REEDS, formerly consulting engineer with John A. Stevens, Lowell, Mass., announces the organization of the firm of Reeds and Thorpe, power engineers, with offices in Hartford, Conn.

E. C. SHRINER, JR., for 23 months Lieutenant in the Ordnance Department, U. S. A., is now connected with the brass goods department of Manning, Maxwell and Moore, Inc., with offices in Pittsburgh, Pa.

COLONEL W. A. STARRETT has joined the George A. Fuller Company, New York, and will serve as vice-president and director.

JAMES GUTHRIE, consulting motor-vehicle engineer of Cleveland, Ohio, and former ordnance engineering representative in the Michigan district, has been commissioned a Lieutenant-Colonel in the Reserve Corps of the U. S. A. He was formerly a Major in the Old Reserves, and served through the war with the rank of Major.

J. R. PEARSON, vice-president and general manager of the Acme Machine Tool Company, Cincinnati, Ohio, severed his connection with the concern November 1.

N. E. PHILPOT, formerly Ensign, U. S. R. F., has been released from active duties as assistant naval inspector of ordnance, and is now connected with The Smith Gas Engineering Company, Dayton, Ohio, in the capacity of mechanical engineer.

AMBROSE SWASEY, Past-President and Honorary Member of the Society, has been elected to membership in the American Philosophical Society, and has also been made an Honorary Member of the New Hampshire Branch, as well as the main Society of the Cincinnati.

GEORGE M. BRILL announces that following an interruption of his consulting practice in Chicago, including two years of war work, he has resumed his practice in New York. He will continue to specialize in the engineering of industrial plants and processes, improvements in operation and financial investigations. Temporary office will be in the Singer Building, New York. After May 1, 1920, he will be located in the Guaranty Fifth Avenue Building.

APPOINTMENTS

CHARLES W. LYTLE, of the Georgia School of Technology, Atlanta, Ga., has been appointed assistant professor of vocational education, College for Teachers, University of Cincinnati, Cincinnati, Ohio.

G. L. KOLLBERG has been appointed manager of the pumping engine department of the Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Mr. Kollberg was formerly engineer of this department.

EARL E. EBY, sales manager, Hyatt Roller Bearing Company, industrial bearings division, has been appointed to the Board of Directors, of Hyatt, Ltd., a new company formed to market the Hyatt bearings in Europe. Mr. Eby will devote his entire time to this work, with headquarters in New York.

PAUL J. KIEFER, Lieutenant (Junior Grade), U. S. N., has been appointed assistant professor steam engineering, College of Engineering, University of Illinois, Urbana, Ill.

WALTER J. MAGUIRE, formerly engineer of tests for the Pacific Coast Steel Company at Seattle, Wash., has been appointed district sales manager for the same company at Portland, Ore.

CAPTAIN E. R. GLENN, Ordnance Reserve Corps, U. S. A., has been appointed production manager for the Simplex Valve and Meter Company, of Philadelphia, Pa.

JAMES A. HALL has been appointed lecturer in machine design at Harvard University, Cambridge, Mass., in addition to his duties of assistant professor of mechanical engineering at Brown University, Providence, R. I.

EMPLOYMENT BULLETIN

THE SECRETARY considers it a special obligation and pleasant duty to make the office of the Society the medium for assisting members to secure positions by putting them in touch with special opportunities for which their training and experience qualify them, and for helping any one desiring engineering services. The applications and positions listed below combine the services of the Society and of the Engineering Societies Employment Bureau, Room 1605, Engineering Societies Building.

POSITIONS AVAILABLE

Stamps should be inclosed for transmittal of applications to advertisers; non-members must accompany applications with a letter of reference or introduction from a member; such reference letter will be filed with the Society records.

INSTRUCTORS: All engineers willing to consider teaching positions are invited to register with Engineering Societies Employment Bureau. The Bureau has been called upon to fill more positions, varying in grade from laboratory assistant to heads of department in various engineering and technical schools of this country, than it has been able to do from among the men now registered. Blanks for purpose of registration and information regarding the Bureau may be had by addressing W. V. Brown, Manager, 29 West 39th Street.

MALLEABLE FOREMAN to become Assistant Superintendent, if ability is shown. Must have thorough molding experience and some knowledge of furnace operation and mixtures of iron. College graduate preferred. Excellent opportunity for man willing to work. R-1727.

SALES ENGINEER: Graduate Mechanical and Steam Engineer from representative engineering college; must be of good appearance, etc.; with manufacturers of special system applied to power and heating plants. Salary \$175 per month; more, if qualifications warrant it; all expenses paid, traveling east of Chicago. Openings for several men. R-1872.

SALESMAN: Must have had engineering training, but must be primarily salesman. Company is large merchandising organization, doing business all over world. Field of operations will be oil-well districts. Openings for several men. Location, Ohio. R-1873.

MECHANICAL DRAFTSMAN: First-class draftsman, capable of laying-out mechanical work and building construction, estimating quantities, and also, supervising work, if occasion demands. Must have initiative and require minimum amount of supervision. Work is in connection with pulp and paper industry, of permanent nature for man with proper qualifications, and with good opportunity for advancement. Location, Quebec, Canada. R-1876.

MACHINE DESIGNER AND DRAFTSMAN: Experience in designing tools and jigs for manufacturing air and ammonia-compressor machinery; experience also in designing air and ammonia compressors preferred. Location, Ohio. Salary, minimum \$150, but depends finally on man, R-1877.

INSTRUCTOR IN MECHANICAL ENGINEERING: Must be technical graduate, preferably with some instruction experience in machine design and gas engines; fairly young man preferred. For single man, living conditions are especially convenient and reasonable. Both school and department are young and growing. Location, Texas. Salary, \$1800 per year. R-1882.

MECHANICAL ENGINEER: Must have special qualifications including advanced courses in physics, or graduate research in mechanical engineering, to take charge of definite phase of instrument inspection and calibration work in instrument-inspection department of large well-known tire and rubber company. Location, Ohio. R-1883.

ASSISTANT MECHANICAL ENGINEER: Must be technical graduate and capable of handling

correspondence and taking charge of drafting room. Experience on gear-head machinery desired. Will be assistant to president. Location, Indiana. Good future. R-1889.

INSTRUCTOR IN MECHANICS AND MATERIALS TESTING: Rapidly growing technical school anticipates the necessity for considerable increase in staff of instructors in elementary mechanics, strength of materials and materials-testing laboratory. It is probable that one appointment will be made about January, 1920, and the others during the summer of 1920. Letters of application should state training and experience and salary now received. Location, Ohio. R-1891.

WATER-WORKS ENGINEER: Experience along lines of design and construction of works for water supply and purification in connection with design and construction of filtration plants for large cities. Location, Ohio. R-1896.

WORKS MANAGER: Experience in adding and typewriting machinery or small interchangeable parts. Location, Connecticut. R-1899.

CHIEF ENGINEER: Experience in adding and typewriting machinery or small interchangeable parts. Location, Connecticut. R-1900.

MECHANICAL ENGINEER: Experience for work covering wide range including power-plant maintenance and modification under changing circumstances, underground piping systems and mechanical equipment of buildings outside of industrial machinery, as well as supervision of mechanical inspectors. Location, Philadelphia. Government position. Salary, \$9.60 per diem. R-1905.

CIVIL ENGINEER: Must be capable of taking full charge of complete design and preparation of specifications for steel concrete, steel brick and wooden structures of industrial type, together with heating, plumbing and sewerage in connection with same. Preferably college graduate, 30 to 38 years of age, with at least six or seven years' experience solely devoted to this line of work. Location, Ohio. R-1908.

ASSISTANT ENGINEER OF POWER: Technical graduate; construction experience and familiarity with operation and power cost accounting essential. Must be able to supervise design and construction of power-house charges and additions; familiarity with steel work and piping layouts required. Apply in own handwriting. Location, Missouri. Salary, \$200 to \$250 per month, depending on man. R-1911.

POWER DRAFTSMAN: Must be neat, accurate and good letterer. Some experience with steel work and piping layout required. Send sample of work, and apply in own handwriting; openings for two men. Location, Missouri. \$125-175 per month, depending on man. R-1912.

ASSISTANT ENGINEER OF EQUIPMENT: Must be technical graduate and familiar with car construction and various equipment in use on electric systems; able to prepare specifications and supervise new car construction, and conduct tests and special studies. Apply in own handwriting. Location, Missouri. Salary, \$200 to \$250, depending on man. R-1913.

DRAFTSMAN: Some experience on rolling stock and car construction for general work. Location, Missouri. Salary, \$125 to \$150. R-1914.

SALES ENGINEER: Position is with welding company, selling welding equipment and supplies, as torches, decarbonizers, welders, all kinds of welding rods and fluxes and engaging in welding and cutting business. Openings for several salesmen. Location, Boston, Mass. R-1915.

REINFORCED-CONCRETE DESIGNERS: Must be graduate of high-grade engineering school and proficient in theoretical engineering, with at least three years' experience in designing important structures of reinforced concrete and structural steel and well informed in latest methods of design; 27 to 40 years of age. Only experienced designers should apply; openings for several men. Besides straight salary are included transportation one way and leave privileges which amount to about 10 per cent in addition salary. Location, Philippine Islands. \$2500 to \$2750 per year. R-1922.

RECENT M. E. GRADUATE: Young technical graduate to take up theoretical design work on steam turbines; practical experience not necessary. Location, New York State. R-1925.

MECHANICAL DRAFTSMAN: For large machine-tool work, as lathes, planes, etc. Location, New Jersey. Salary, \$40 up. R-1928.

WORKS OR PRODUCTION MANAGER: Must be first-class man and have experience in the manufacture of automobile bodies. Location, New York City. Salary depends on experience. R-1930.

DRAFTSMAN: Must have knowledge of shop layouts. Government position. Location, Philadelphia. R-1936.

MECHANICAL ENGINEER: Young man, capable of planning boiler installations, making estimates and proposals and attending to installation of boilers. Will be given charge of as much work as he can handle after he has become sufficiently experienced to be trusted. Location, Philadelphia. R-1937.

MECHANICAL ENGINEER: Young American, capable of taking charge of up-keep of machinery and power plants of several crude-rubber factories; need not have degree, but must be thoroughly familiar with machine-shop practice and be able to take hold of existing simple installations and bring them up to maximum production; must be capable of making simple extensions to existing plants, and laying out and directing work of installation of simple new machinery. Should be capable of directing work of mixed labor. Opportunity for bright, capable American to connect with Chinese commercial house of highest standing commercially and progressively. Location, Singapore. R-1938.

ENGINEERING AND SALES REPRESENTATIVE: Manufacturer of power-plant and heating equipment desires to establish connections in several centers. Preference given to individuals with engineering experience already established in these centers who could combine such representation with that of one or two non-competitors in the same field. Give details of training, experience, present connections, terms, etc. Openings for two men. Location, Western New York and Texas. R-1939.

TECHNICAL ADVERTISING MANAGER: Must have thorough knowledge of power-plant practice and first-class record of past service. Position is with manufacturer of soot blowers. Unusual opening for a man

with brains, and desire to settle permanently. State minimum salary. Location, Detroit. R-1940.

INSTRUCTOR IN MECHANICS AND LABORATORY ASSISTANT: Must be young graduate engineer; to teach mechanics and assist in laboratory for testing materials; teaching experience desired, but not necessary. Openings for two men, one man wanted at once and the other February 1, 1920. Apply by letter. Location, Pennsylvania. R-1942.

SUPERINTENDENT OF POWER: Graduate engineer, familiar with blast-furnace plant, including boilers, blowing engines and turbo-generators. Must be familiar with electric-line work and motor applications. Location, Alabama. Salary, \$6000 to \$7000. R-1943.

ELECTRICAL AND MECHANICAL ENGINEERS: Experienced in work of designing and drafting for lock, dam and power-house structures. Openings for several men on Government work. Location, Alabama. R-1945.

DESIGNING DRAFTSMAN: Technical training and wide experience; familiarity with turbine practice desirable. Permanent position and good chances for advancement for man with proper qualifications. State age, education, experience and salary expected. Location, Pittsburgh, Pa. R-1946.

MECHANICAL DRAFTSMAN: Preferably young man with reasonable amount of experience in mechanical drafting and, if possible, some experience in mining and map work. Location, Mexico. Salary, \$150 per month to start. R-1953.

MECHANICAL DRAFTSMAN: Must be familiar with detail design of steel tanks, steel plate construction and light structural work. Apply by letter giving age, experience in detail, salary expected, when available, etc. Location, Maryland. R-1957.

WRITER: An able writer on steam-power and machine-tool subjects for preparation of catalogs, circularizing literature and advertisements in our advertising agency; preferably, but not necessarily, familiar with printing details. Permanent position and opportunity for advancement to man who is competent, resourceful and has capacity to produce. Location, New York City. R-1959.

STRUCTURAL STEEL DRAFTSMAN: Position is with fabricators of structural steel, doing all classes of work in this line. Permanent position for right man; 44 hours per week; straight time for overtime, if any is done; excellent working conditions and opportunity for advancement. Location, Pennsylvania. Salary, up to \$1 per hour. R-1964.

SALES ENGINEER: Preferably technical graduate with experience in conveying machinery. Opportunity exceptionally good. Location, New York City. R-1965.

INSTRUCTOR IN MECHANICAL DRAWING AND DESCRIPTIVE GEOMETRY: Must be practical draftsman for position with educational institution endeavoring to teach drawing to freshman class as it is done in commercial drafting office. Technical graduate preferred, non-graduate could arrange to work for degree on the side. Salary, \$150 per month. Location, Montana. Open January 1, 1920. R-1969.

MECHANICAL METER REPAIRMAN: Maintenance and repair of all mechanical meters, consisting of G. E. steam-flow meters, Bailey boiler meters, venturi meters, recording pressure gages, draft gages, etc., in large plant. Location, Ohio. R-1970.

ELECTRICAL SALES ENGINEER: Must have had technical and practical experience along all electrical lines, must be competent to make layouts of factories, industrial plants and power plants of medium size and be able to present the complete equipment of machinery from sales standpoint. Company would expect man to make proposition to

start on reasonable salary until he has demonstrated ability. Location, Seattle, Wash. R-1971.

DESIGNING DRAFTSMAN: Experience on optical and mathematical instruments, instruments of precision, especially on range finders. Location, Massachusetts. R-1973.

SALES ENGINEER: Must be familiar with lubricants; must speak and understand Italian. Location, Italy. R-1975.

DESIGNERS AND LAYOUT DRAFTSMEN: Must be first-class men on heavy machinery such as tractors, harvesters, etc. Openings for several men. Location, Illinois. R-1977.

INSTRUCTOR IN MECHANICAL ENGINEERING: Mechanical engineer to teach classes in machine shop, foundry and industrial engineering. Should have completed collegiate course in mechanical engineering at good technical college and should have some practical experience preferably in metal-working lines. Able to take direct charge of classes in foundry, pattern making, and machine-shop work, and have supervision over other shop instruction, able to give instruction in classroom subjects on industrial engineering. Would receive the title of Assistant Professor in mechanical engineering. Location, Texas. Salary, \$1800 for nine months. R-1978.

MACHINE DESIGNER: Work will be on rubber machinery; moderate machine-tool experience necessary. Location, New Jersey. R-1981.

SALES ENGINEER: Preferably with experience as chief marine engineer, or graduate engineer, familiar with internal-combustion engines and with automobile trade. Must be good salesman, of good appearance and possess ability to meet best people. Salary, \$2700 to start. Headquarters probably Detroit, Mich. R-1984.

MECHANICAL ENGINEER: Technical graduate, preferably with three or four years' experience along following lines: power plant, air conditioning, elevating and conveying machinery. Location, Pennsylvania, about 100 miles from N.Y.C. Salary, \$250 to \$275. R-1987.

SQUAD BOSS (DESIGNER): Experience in building design and, if possible, also in power-plant work, air conditioning and elevating and conveying machinery. Openings for 2 men. Location, Pennsylvania, about 100 miles from N. Y. C. Salary, \$220 to \$250. R-1988.

MECHANICAL DETAIL DRAFTSMAN: Must have experience of general nature. Several detailers wanted. Location, Pennsylvania. Salary, \$150 to \$175. R-1989.

POWER DRAFTSMAN: Familiar with power-house design, construction and operation. Location, Providence, R. I. R-1990.

MECHANICAL ENGINEER: Capable of designing automatic machinery; one who already has a record of achievement and large and long experience in this line desired. Attractive salary will be paid. R-1993.

MACHINE DESIGNER AND DRAFTSMAN: Must have experience in automatic-machine design and be familiar with small wire-forming machinery, like that used in the manufacture of wire hooks and eyes, safety pins, etc. Location, Philadelphia, Pa. R-1994.

DESIGNING ENGINEER: High-grade designer, familiar with centrifugal compressors, steam turbines, and special or electrical machinery. Location, Massachusetts. R-1995.

MACHINE TOOL DESIGNER: General experience in designing machine tools. Location, New York City. R-1998.

MACHINE DESIGNER: To design and develop automatic and semi-automatic machine for manufacture of small interchangeable parts in quantity. Excellent opportunity for high-grade technical man to establish permanent connection with large corporation. Give full details as to experience, salary desired, etc. R-2000.

PROFESSOR OF MECHANICAL ENGINEERING: To arrange courses, organize program for work, and make estimates of cost of equipment and materials necessary for shops and laboratories, for position in middle western university. R-2002.

TOOL DESIGNER AND DETAIL DRAFTSMAN: Positions are with manufacturer of instruments, such as speedometers, etc. Location, vicinity of New York City. R-2004.

RECENT M. E. GRADUATE, who has had some experience in steam engineering, or at least good knowledge of same, desired by company building and marketing surface and jet condensers, closed heaters for all services, evaporators, distillers, expansion joints, evacuator air pumps, etc. Year or so of practical experience desirable, but not absolutely necessary, for man with the right foundation. Location, Buffalo, N. Y. R-2007.

DRAFTSMAN AND ENGINEERS: Familiar with power-plant work. Several men wanted in connection with design and construction of several large power plants. Location, Milwaukee, Wis. Salary, \$125 to \$175, according to ability and experience. R-2012.

MECHANICAL ENGINEER: Especially fitted to make studies and drawings of equipment layouts and shops for manufacture of forgings, brass and steel drawing, machining of small brass parts, etc. Drawings will be made of foundations, location of machines, counter-shafting, line shafting, etc. Location, Philadelphia. R-2018.

INSTRUCTOR IN RADIO TRANSMISSION to teach theory and practice of radio transmission, including theory of transient electric phenomena. Graduate of first-class engineering college with at least one year of graduate work including mathematical theory of electricity, particularly of radio and transients preferred. Appointment will be for remaining months of this college year, at the rate of \$2000 for nine months. Location, Middle West. R-2019.

GENERAL ENGINEERING DRAFTSMAN: Familiarity with general plant layout work, piping, industrial equipment, etc. Location, vicinity of New York City. Salary depends upon man. R-2021.

MECHANICAL DRAFTSMAN: Familiar with power-plant work. Application by letter stating experience and qualifications. Location, vicinity of Chicago. Good salary. R-2022.

FURNACE DESIGNER: High-grade man with experience on industrial-gas and oil-burning furnaces, also on fuel-oil systems for power plants. Two openings. Location, Massachusetts. R-2023.

ENGINEER OF TESTS: Ability to test steam plants for efficiency both before and after improvements have been applied. R-2027.

DESIGNERS: Must be able to solve engineering problems in connection with design of small tools and fixtures for gear hobbess and slotting machines. Several openings. Location, Connecticut. Salary, depends upon man. R-2028.

SUPERINTENDENT OF HARDENING AND HEAT-TREATING ROOM: Should be experienced and thoroughly capable to take charge of department and cooperate with manufacturing departments in every way. Work is chiefly on regular production of small parts with some special tool-room work. Department consists of six furnaces. Location, New York State. R-2029.

MANAGER FOR DISTRICT OFFICE: Thoroughly familiar with building trades, and especially with reinforced-concrete industry. Should be competent to oversee all details connected with operation of district office. Position is with construction company, doing large volume of business in erection of forms, both wood and steel, for reinforced concrete buildings, and also erection of concrete reinforcing steel. Several openings. Salary, \$3000 to \$5000 per year. R-2036.

ESTIMATING AND COST ENGINEER OF BUILDING CONSTRUCTION: Should be particularly conversant with reinforced-concrete work, cost of form work, cost of assembling and erection of reinforcing steel, etc. Openings for several men. Location, Pittsburgh, Pa. R-2037.

SUPERINTENDENT OF CONSTRUCTION: Must be thoroughly familiar with operation in construction of reinforced concrete buildings. Duties will include direct supervision of contracts in field; will be held responsible for carrying out directions of management and for organizing field forces, for dealing directly with, and employing labor. Several openings. Location, Pittsburgh, Pa. R-2038.

FACTORY SUPERINTENDENT: Extensive experience as factory executive such as would fit applicant to manage machine shop manufacturing wire-plant machinery and cigarette machinery. Location, Connecticut. R-2045.

CHIEF DESIGNER, extensive experience on small machine parts such as used in cigarette machinery. Location, Connecticut. Salary depends upon man. R-2046.

AUTOMOBILE ENGINEER: Must thoroughly understand designing, mechanical construction and assembling of motor cars. Man living in vicinity of Boston preferred. R-2054.

MANUFACTURING EXECUTIVE: thoroughly experienced manufacturing executive to take charge of plant employing approximately five thousand men. Must be technically trained and able to guide design as well as intensive, progressive manufacture of varied line of power equipment, including gas engines, pumps, etc. Give full details of age, experience, training, salary expected, in first letter. Location, Middle West. R-2055.

ELECTRICAL-ENGINEERING EXECUTIVE: Experienced executive to take charge of design and manufacture of line of electrical machinery with old-established concern. Prefer technically trained man. Must have experience in electrical line. Give full details in first letter. Location, Middle West. Salary depends upon experience. R-2056.

MECHANICAL DRAFTSMAN, capable of working independently from data and sketches and of showing individuality and initiative. Technical education desirable but not necessary. Work is on the board. The company's product includes condensers, pumps, general power-plant equipment, piping layouts, general machine design and plant improvement. Two openings. Location, New Jersey. \$35 per week to start. R-2057.

(A) PRODUCTION MANAGER, (B) CHIEF ENGINEER, (C) CHIEF INSPECTOR with extensive experience and proved ability in type-writer, adding or similar machine-manufacturing fields. Location, Pennsylvania. R-2059.

CHIEF DRAFTSMAN, valves and fittings. Growing concern needs experienced man on design of product, machines and equipment for same. Executive ability necessary. State experience in detail, salary expected and when you can report for duty. Location, New York State. R-2060.

DESIGNER: Must be familiar with up-to-date factory methods, tolerances, checking, etc. Location, Newark, N. J. Salary, about \$45 per week. R-2064.

TOPOGRAPHICAL DRAFTSMAN, experience in topographic drawing. Location, Mexico. Salary, \$150 and all expenses. R-2067.

CONTROL AND EQUIPMENT ENGINEER: Experienced man, about 35, with ability to take complete set of drawings, such as truck or tractor, select efficient modern machine-tool equipment for certain production, and design complete set of efficient jigs, tools, fixtures; man must be real doer, with up-to-date experience on this class of work; new plant, small town, 18 miles from Philadelphia; to receive reply, state full details, with previous earning capacity. R-2068.

ASSISTANTS IN METALS TESTING LABORATORY, College graduate desired. Location, Urbana, Ill. R-2069.

DRAFTSMAN, with experience in surveying, structural and mechanical drawing. Location, Virginia. R-2070.

EDITOR: Young graduate engineer about 25 years of age for general publicity work. Location, New York City. R-2072.

INSTRUCTOR IN PHYSICS: An engineering college near New York City desires instructor in engineering physics. Position offers advantage of thorough grounding in science and excellent opportunity for advancement to satisfactory commercial position. R-2075.

ASSISTANT PROFESSOR OF MATHEMATICS qualified to assist temporarily in physics. Duties will consist of teaching 20 hours per week. Salary, \$200 per month. Location, Florida. R-2076.

FOUNDRY SUPERINTENDENT: Must be competent to take charge of foundry employing about 80 men. Location, New York State. R-2077.

CHIEF DRAFTSMAN, by Pacific Coast concern manufacturing large line of internal-combustion engines. Permanent and attractive position with opportunity to advance to chief engineer is offered to energetic and capable designer. Some knowledge of heavy-oil engines desirable, but not the deciding factor. State experience in detail, references, age, nationality and lowest initial salary. All communications strictly confidential. R-2078A.

SHOP FOREMAN: Must be experienced in management of small machine-shop for position in department composed of about 30 machines. Location, Seattle, Wash. R-2078B.

ASSISTANT MANUFACTURING SUPERINTENDENT: Should be thorough mechanic, good executive and a man of ideas—able to devise ways and means of manufacture, and have a thorough knowledge of handling of metals. Important would be deep drawing of steel. Man of integrity, a worker, diplomatic and thoroughly up-to-date. Would prefer a married man, around 35 years of age. To receive attention, give full details as to personality, experience, references and salary expected. Location, Western Massachusetts. R-2079.

ASSISTANT PROFESSOR OF ELECTRICAL ENGINEERING: Middle Western University, electrical engineering department, desires to appoint, before February 1920, an assistant or associate professor of electrical engineering qualified to assume charge of central station and electric railway courses. Experienced engineer who has carried on investigative work resulting in contributions to the art is desired. R-2080.

INSTRUCTOR IN ELECTRICAL ENGINEERING: Middle Western University, electrical engineering department, will have opening in February for instructor in Electrical Engineering. Man with unusually thorough grasp of fundamental electrical theory and some experience in engineering of teaching field is desired. Salary, \$1500-\$1800 for nine-month school year. R-2081.

DRAFTSMAN: Education as chemist or as chemical engineer, and one or two years' experience in chemical industry. Experience at explosives-manufacturing plants would be asset. Application by letter. Position is with government bureau. Location, New Jersey. R-2083.

DRAFTSMAN: First-class mechanical draftsman with experience in industrial smelter and refinery plants. Applicant should have experience in structural design, and be thoroughly competent to lay out both buildings and machinery. Application by letter. Location, New Jersey. Salary, about \$45 per week. R-2084.

DRAFTSMAN, thoroughly capable and reliable. Duties will consist of preparing drawings for buildings, including plumbing, sewerage and ventilating systems, track and trench work, roadways, paving, etc. Location, Cleveland, Ohio. R-2085.

CRANE OPERATOR. In operation of locomotive crane, being manufactured by Industrial Works of Bay City, Mich., most important part of work will be in handling of reinforced concrete piles, 2 ft. x 2 ft. x 110 ft. in length, and weighing 35 tons each, to be lifted by a four-point suspension. Crane will then be propelled on wide-gage track to pier, negotiating curve and switch en route, where load will be lowered to scow. Erection of this crane will also be handled by operator. Location, Manila, Philippine Islands. R-2096.

DRAFTSMAN with experience in dies for light sheet-metal work in punch and draw presses. Location, Ohio. R-2098.

RECENT technical graduate with some practical engineering experience for engineering correspondence, bulletin and price-list work on pumping machinery. State education, experience, salary expected, and how soon available. Service man preferred. Location, Massachusetts. R-2100.

DESIGNER: Must be experienced on steel-plant and rolling-mill work. Salary, \$225 per month. Location, Ohio. R-2107.

INSTRUCTOR IN MECHANICAL ENGINEERING: Duties will include recitation and laboratory work in steam gas engines and steam boilers. Previous teaching experience desirable. Beginning salary, \$2000 per year. Location, Middle West. Enclose recent photograph, if possible, with application. R-2105.

CHEMICAL ENGINEER with thorough technical training, preferably in organic chemistry, and mechanically inclined. Work is in miniature plant of large manufacturing concern where all new processes are tried out before they are put into operation on a large scale. Location, Cleveland, Ohio. R-2260.

ANALYTICAL CHEMISTS for industrial work. Two openings. Location, Cleveland, Ohio. R-2260A.

EXPERIENCED DESIGNERS AND DRAFTSMEN, on reinforced concrete buildings and structural steel buildings; also designers and draftsmen experienced in conveying machinery such as would be used in an automobile plant. Several openings. Location, Flint, Mich. R-2261.

CHIEF DRAFTSMAN: Must be familiar with general machine design, and big and broad enough to handle problems of power and plant engineering. Office now employs about ten men. Excellent opportunity for future advancement. Location, Massachusetts. R-2262.

YOUNG ENGINEER with experience in mining, railway work and land lines. Must be fair draftsman and willing to grow up with a large operation. Salary, \$150 per month start. Location, Alabama. R-2263.

MECHANICAL DRAFTSMAN with understanding of foundry pattern work. Salary, \$30 per week. Location, New Jersey. R-2264.

REINFORCED CONCRETE DESIGNER for factory building work. Must know flat-slab construction. Salary, \$50 per week up. Location, New York City. R-2265.

STRUCTURAL STEEL AND ARCHITECT ENGINEER, 30 to 35 years old, for designing and drafting work. Permanent position. Salary, \$200 per month. Location, New York City. R-2267.

SALES ENGINEER for special power plant auxiliary equipment. Headquarters at New York City. R-2268.

ASSISTANT ENGINEER with mechanical and electrical experience for design, experimental and research work. Marine experience would be useful. Location, Massachusetts. R-2269.

LABORATORY ASSISTANT for flotation work on custom ores. Location, New York City. R-2270.

YOUNG MECHANICAL ENGINEER, from 25 to 30 years of age; preferably with experience in oil plant work. Location, New Jersey. R-2271.

AN AMBITIOUS MAN with about three or four years' experience in designing of commercial electric motors, also specifications and production methods in manufacturing. Location, Maryland. R-2273.

RECENT GRADUATE IN MECHANICAL ENGINEERING for development for sales work. Good future. Location, New York City. R-2274.

FIRST-CLASS DESIGNER familiar with highway and city improvements including all branches of both. Salary, \$175. Location, Kansas. R-2275.

ESTIMATOR with experience in the construction of refrigerating plants, particularly of the compression type, and in estimating. A draftsman with experience on the layout of refrigerating plants and equipment would be considered. Location, Cincinnati, Ohio. R-2276.

GENERAL MANAGER for plants of a large manufacture of artificial wall boards. Would supervise and coordinate the work of the various plants from the grinding of the wood pulp to the finished product. Man of some standing who has already achieved a certain amount of reputation desired. R-2277.

DIESEL DESIGNERS are wanted by a well-established company now organizing a Diesel Motor Department for both stationary and marine Diesel Motors. Location, Ohio. R-2278.

DRAFTSMAN familiar with automatic machine design. Two openings. Location, New York City. R-2279.

EXPERIENCED LOCOMOTIVE DESIGNERS, DETAILERS, AND TRACERS wanted by firm of locomotive builders. Detailers and tracers without locomotive experience will be considered. Location, Penn. R-2280.

ASSISTANT TO PLANT ENGINEER: Mechanical Engineer, with general plant engineering experience, to have supervision over the operation and maintenance of power plant, compressed air, gas, ventilation and heating systems. Man with considerable initiative and intelligence desired. Location, Bridgeport, Conn. R-2281.

RECENT ENGINEERING GRADUATE for surveying, drafting, construction and power plant work and general mill engineering. Location, Passaic, N. J. R-2282.

TOOL, JIG AND FIXTURE DESIGNER, must be able to use trigonometry with ease; work is not unusually difficult. Salary, about \$35 per week. Location, New York City. R-2283.

MECHANICAL ENGINEER for research, experimental and development work on artillery ammunition. Man with considerable research experience and familiarity with standard manufacturing processes desired. Government position. Location, Philadelphia. R-2284.

DRAFTSMAN, for Plant Engineering Division, of Industrial concern; Architectural, experienced on reinforced concrete and steel building. Electrical, familiar with lighting and power layouts. Pine, able to lay out service and hot water piping. Mechanical, general experience. Salaries in accordance with ability. Location, Conn. R-2285.

DRAFTSMAN with knowledge of ordinary mechanical drafting such as is needed in the designing of new plants for chemical processes. Good future. Location Hastings-on-Hudson, N. Y. R-2286.

EDITORIAL WRITER for technical research and development work. Must have a technical degree and several years of experience in editorial work on trade papers, and in general engineering work. Man between 28 and 35 years of age desired. Salary, about \$3000 per year. Application must be made through a commercial employment agency, which charges a placement fee. R-2287.

INSTRUCTOR IN ELECTRICAL ENGINEERING in a Western University. Two years' practical experience desirable; can begin duties at once. R-2288.

ENGINEER for technical publication work; must have had editorial and report writing experience. Refrigeration experience also desirable. Location, Middle West. R-2290.

TECHNICALLY TRAINED ENGINEER wanted to conduct test work on custom ores. Applicant should have a good understanding of concentration in general with special reference to oil flotation. Desirable that applicant be conversant with analytical work in order that he may supervise chemical as well as experimental work. Situation in eastern part of country. Advise salary desired, when available, and give full details of past experience, together with list of references. R-2292.

RECENT GRADUATES in mechanical engineering for testing work. Two openings. Salary, about \$200 per month. Location, Chicago. R-2291.

SALES MANAGER to take charge of the New York Office of a company manufacturing concrete machinery. Will have to develop new business. Only those who have established reputation for such accomplishment will be considered. R-2293.

CHIEF OF PARTY for permanent position in Jamaica, Long Island. R-2294.

SALES ENGINEER to sell technical books. Salary, \$50 per week. R-2295.

YOUNG ENGINEER with a minimum of two years' experience in oil-burning equipment in connection with steam-power plants. Location, New York City. R-2296.

CHEMICAL, ELECTRICAL AND MECHANICAL ENGINEERS, recent graduates, for work in lamp development laboratory. Openings for 8 or 10 men. Location, New Jersey. R-2297.

CHEMIST, preferably one with several years of practical experience after graduation from college along the lines of general steel mill analysis. Should have ability and initiative to assume the position of chief chemist of laboratory in the near future. Location, Philadelphia, Pa. R-2298.

SALES ENGINEER to sell sugar centrifugals in Cuba and throughout the West Indies, man with a speaking knowledge of Spanish preferred. R-2299.

TRANSLATOR, electrical engineer preferred, who can rewrite French technical information into English. One who has received his education in France would naturally be preferred, but it is not essential. Location, New York State. R-2300.

YOUNG ELECTRICAL ENGINEER with industrial experience and some teaching ability for a teaching position that will pay from eighteen to twenty-one hundred dollars at the start; should be the kind of man who can get along with boys and influence them properly. Location, St. Louis, Mo. R-2301.

RESEARCH ASSISTANT for University Engineering Experiment Station. Graduate study in Electrical Engineering, or experience in research, essential. Location, Illinois. R-2302.

MACHINIST FOREMAN for medium-sized manufacturing and repair shop. Location, Perth Amboy, N. J. R-2304.

MECHANICAL OR ELECTRICAL DRAFTSMAN for electrical heating appliances. Location, New York City. R-2305.

MECHANICAL ENGINEER under 30 years of age, with experience in the oil business. Location, New York City. R-2306.

SUPERINTENDENT FOR SHOP, including Iron Foundry, with 300 employees, making Air Compressors, Rock Drills, Pneumatic Tools, and allied lines. Location, Province Quebec, Canada. R-2307.

ENGINEER for design and development of Mining Machinery. Location, Province Quebec, Canada. R-2308.

DRAFTSMAN familiar with industrial plant work, consisting of piping, transmission and construction work. Location, New York City. R-2309.

INSTRUCTOR IN MECHANICS at a Middle Western University for next semester, beginning about February 10. Salary will depend on qualifications; maximum, \$1000 for academic year. R-2310.

ASSISTANT IN ENGINEERING AND SALES OFFICE: young man, recent technical graduate in mechanical engineering. Location, Providence, R. I. R-2311.

MECHANICAL DRAFTSMAN: experience on stationary and marine engines and general machinery preferred. Location, Providence, R. I. Permanent position for right man. R-2312.

MECHANICAL LABORATORY INSTRUCTOR; must be able to teach Kinematics. Salary, \$1300-\$1500. Location, Maine. R-2313.

BRIDGE ENGINEER: Extensive experience in steel and reinforced-concrete structures and designing and constructing ability. Good opportunity for increasing responsibility and salary. Government position. Location, Montana. Salary, \$250 per month to start. R-2025.

MECHANICAL DRAFTSMEN: Should have served apprenticeship in blue-printing and tracing; 2 to 6 years' experience in actual detail and layout work. Working knowledge of machine designs and design of small parts. Age, 26 to 40 years. Married men preferred; physical condition and eyesight must be excellent. Duties consist of general detail design and layout work in drafting room on machines used in articles produced in manufacture of Kodak's and films. Several openings. Application by letter; giving list of places formerly employed together with names of employer. Location, Rochester, N. Y. Salary, \$50 to \$60 per week, depending upon experience and ability. R-2041.

ARCHITECTURAL DRAFTSMEN, with advanced experience, are required for this work. Should be conversant with details of buildings, layout and construction and requirements in New York State. Must be able to plan and do independent work. Duties will consist of planning of buildings, laying out floor plans, designing elevations, etc. Age, 26 to 40 years; married men preferred; physical condition and eyesight must be excellent. Several openings. Applicant should give list of places formerly employed, and names of employer. Location, Rochester, N. Y. Salary, \$50 to \$60 per week for high-grade men. R-2042.

DESIGNER: Large rubber manufacturing company located in New York City desires first-class tool and machine designer. Candidates should have at least four years' experience in designing of automatic machinery and tools for interchangeable quantity production. Only men thoroughly competent will be considered. Excellent permanent position open. In applying state age, education in detail, experience and salary desired. Location, New York City. R-2061.

SALES ENGINEER: Leading firm of power-plant specialties manufacturers has promising opening for young engineer to act as assistant to district manager. Require good general and some technical education, high character and will to succeed. Practical knowledge of power-plant design or operation an advantage. Previous selling experience not absolutely necessary. Position pays a small salary to start, but has unlimited possibilities for right man to develop from sales engineer to branch manager. Location, New York City. R-2062.

MEN AVAILABLE

Only members of the Society are listed in the published notices of this section. Copy for notices should be on hand by the 12th of the month, and the form of notice should be such that the initial words indicate the classification. Notices are not repeated in consecutive issues.

MECHANICAL CHEMICAL SALES ENGINEER: technical graduate; extensive experience in by-product coke-oven layout, apparatus design and operation, power-plant heating and ventilating, and sales work; desires connection with company manufacturing engineering specialties, temperature-controlling devices, etc., or chemical by-products. Would not object to some design work in connection with sales. Age 32. A-2987.

POWER SPECIALIST; technical graduate; age 32, married. Ten years' experience in power-plant construction, operation and management. Two years' experience with gas engines and producers. Desires position with industrial concern in charge of steam and power generation and utilization. Employed, but available within two months. Minimum salary, \$300. A-3451.

CONSULTING ENGINEER, with extensive experience on interchangeable non-ferrous and ferrous metallic products, both as to standardization of manufacturing processes and scientific management. Knowledge of French language and industrial conditions. A-4417.

ENGAGEMENT WANTED AS CHIEF DRAFTSMAN OR CHIEF ENGINEER on industrial-plant construction extension or maintenance. Experienced in several branches of engineering, budget systems and unit-cost keeping. Good executive; 18 years' practical experience. Can secure skilled technical assistants. Excellent record. Many references. A-4509.

FACTORY EXECUTIVE seeks greater responsibilities as works engineer or assistant; 18 years' comprehensive designing, engineering and production experience, principally on steam-power machinery, including turbines; plant layout; equipment; standardization of product; and methods for coordinating and efficiently controlling various functions of plant operation. Age 36. A-4617.

ENGINEER EXECUTIVE; ability to devise simple methods of manufacturing high-class products; desires position as superintendent or equipment engineer. Experience; printing machinery, ball bearings, incandescent lamp machinery and small arms. Location, New York City or New Jersey. A-4847.

CONTRACTORS ENGINEER; experienced in heavy-construction work; 12 years on subway construction, 3 years as supervising engineer on industrial buildings for contractor; capable of estimating, purchasing materials and closing contracts; wants position where executive ability is essential. Technical graduate. A-4919.

SALES ENGINEER for Philadelphia territory; age 29; technical graduate; broad experience; at present in partnership with consulting engineer handling general management and getting of business. Wide personal and business acquaintance. Salary or commission. A-5160.

WORKS ENGINEER; age 25; technical graduate; as engineer and draftsman in construction of machine tools, steam engines, lumber machinery and railroads; position must require plenty of hard work, be permanent and have good opportunities for advancement. Married. Employed at present. A-5161.

MECHANICAL ENGINEER OR POWER SUPERINTENDENT; technical graduate with 16 years' experience in design, construction and operation of central-power stations wishes position in similar line or as industrial-plant manager. A-5162.

MECHANICAL OR SALES ENGINEER for service in Japan, China or Siberia; have had 17 years' experience in Far East in contracting for and installing industrial plants, in manufacturing and in consulting work; desires engagement as representative of large American manufacturing company. A-5163.

ENGINEER AND DRAFTSMAN; married; 15 years' practical experience in steel mining and general industrial-plant engineering; present position chief draftsman for large steel and coal company; desires change of engineering nature, but not necessarily in drafting room. A-5164.

INDUSTRIAL ENGINEER; college graduate, 35 years of age; successfully handled labor and organization problems and installed effective methods of material and production control in several plants. Experienced in industrial investigations, factory layouts and standardization work. A-5165.

ELECTRICAL AND RADIO ENGINEER; university graduate; age 26; married. Four years' experience in plant layout and in design of electrical and radio apparatus. Desires position as designer or supervising draftsman with large concern where opportunities are offered for advancement. Only responsible and permanent position will be considered. Minimum salary, \$2800. A-5184.

DESIGNER; age 32; fourteen years in machine shop and drawing room; technical education and ability to apply it; can handle drawing room on special machinery, experimental and development work. A-5183.

MINING ENGINEER; married; age 42 years; 20 years' experience mining and metallurgy in States, Mexico and Central America; speaks French and Spanish; late superintendent large low-grade gold property, California. Open for engagement, preferably South America. A-2425.

ASSISTANT TO GENERAL MANAGER, OR PLANNING ENGINEER. At present employed as head of cost and production departments of well-known machinery company. Seven years' experience, covering wide range of manufacturing in various executive positions; lowest salary to start, \$5000 per year. A-3243.

MECHANICAL ENGINEER; graduate M. I. T. 1917; two years' engineering experience as draftsman and assistant to superintendent; desires position as assistant to engineer or superintendent with manufacturing concern. A-3249.

SUPERINTENDENT OR EXECUTIVE ENGINEER; technical graduate; 18 years' general engineering and practical experience in large industrial plants, as power-efficiency engineer, superintendent of power plant, works engineer and mechanical superintendent. Thoroughly familiar with plant organization, general accounting and business methods as applied to industrial-plant operations. A-4651.

EXECUTIVE ENGINEER; age 25; open for engagement with progressive organization. Has had exceptional experience in mathematical designing, drafting, production and order departments, estimation of raw material requirements, power-plant tests, maintenance, plant efficiency, general accounting and business methods. Location, East. Salary, \$4000 a year. A-839.

YOUNG ENGINEER, American, age 24, desires position in technical or commercial capacity; experience comprises two years' shop production and drafting. Location, United States or abroad. A-1739.

INDUSTRIAL ENGINEER; experience includes design, construction, organization and operation of industrial plants, also selling such services. Has held positions as assistant general manager and works manager. In Ordnance Department was head of branch of inspection detailed in Washington. Later, was assistant district inspection manager, assistant district chief and chairman of District Salvage Board, and as chairman of latter, organized forces and planned for inventories, sales and storage of Government property. A-4289.

MECHANICAL ENGINEER; age 38; last four years manager sulphuric-acid plant; desires connection in Philadelphia or vicinity. Technical graduate. Other experience in water works, fertilizer factories, coal mines, shops and cement plants as designer and superintendent of construction. A-4698.

EXPERIMENTAL OR RESEARCH ENGINEER in automotive industry; 2 years as engineer of tests in charge of physical tests, heat treatment experiments, pyrometers, etc.; 1½ years on efficiency work; and 1 year in charge of heat-treatment and inspection of seamless-steel cylinders. Technical graduate; age 25. A-5234.

POWER-PLANT ENGINEER; technical graduate; age 35; married; 10 years' experience as chief engineer and superintendent of design, construction, operation, and maintenance of power plants; heating and ventilation, and refrigeration in large institutions; available for similar work, or general designing with manufacturer or consulting-engineering firm. Salary, \$3600. A-5235.

SALES ENGINEER; technical graduate; married; age 30; 3½ years' factory experience as assistant engineer in large refinery; 2 years' purchasing and selling of machinery with export company; 1½ years Captain U. S. A. purchasing ordnance equipment and in charge of utilities. Now employed. Location, New York or vicinity. A-5236.

ASSISTANT PRODUCTION ENGINEER; technical graduate in industrial engineering; age 24; over 2 years' excellent experience as assistant mechanical engineer in plant employing 10,000; desires to get into production work, for which he feels best suited and most interested. Not afraid of responsibility or work. Minimum salary, \$2400. A-5237.

ASSISTANT TO PLANT SUPERINTENDENT; technical graduate; age 30; 6 years' experience in belt and special duty-conveyor industry, as production man, estimator, and engineer supervising design, and purchase of equipment, and materials; also experienced in estimating building material and equipment. New England preferred, but New York or Middle Western location considered. A-5218.

SUPERINTENDENT OR WORKS MANAGER with 20 years' versatile experience in construction, equipment maintenance, quantity production, development and interchangeable manufacture. Expert practical mechanic and graduate mechanical engineer. Connection with stable concern desired. Remuneration commensurate with responsibilities. A-3542.

ASSISTANT TO CHIEF ENGINEER, EXECUTIVE OR SALES. Harvard graduate; age 30; married; 9 years' engineering and executive experience, hoisting, conveying, power transmission, and coal-handling apparatus. A-3245.

RECENT GRADUATE desires position in factory in minor executive capacity. Desires to learn the management, etc., of factory; hence salary is no object. Factory must be in New York City or immediate vicinity. Has had one year's experience as assistant to manager in California lumber mill. A-5179.

COLUMBIA GRADUATE; age 27; single; desires opportunity with an efficiency or industrial engineer, or as assistant works manager. Has had four years of varied experience on construction work; in charge of electrical and mechanical equipment and in all departments of large electric-light and power company. A-247.

GRADUATE MECHANICAL ENGINEER; 17 years' experience in construction and commercial work; recently released from army; desires connection with progressive company in executive capacity; or, to represent company as sales agent in New York City. American, married, age 40. A-5231.

SUPERINTENDENT OR PRODUCTION ENGINEER; technical graduate; 16 years' experience, covering layout and operation of power plants, steel-mill, machine-shop, foundry and airplane work; ability to plan and rout work, develop equipment, handle men and produce results in wood or metal. Now employed. A-1868.

MANUFACTURING ENGINEER; 9 years' experience in machinery manufacturing industries. Knowledge of design, plant operation and management, shop-cost accounting, production systems, appraisals, graphic analysis, etc. Desires position within 100-mile radius of New York or in New England. At present employed. Age 31; married. A-5261.

SHIPYARD MANAGER OR CHIEF ENGINEER; 20 years' experience on ships and shipbuilding; 5 years in executive position controlling up to 2500 men; thorough theoretical and practical knowledge of ship and propelling machinery, construction and repairs. Will be disengaged shortly. Desires position of responsibility. A-5262.

SAFETY ENGINEER; graduate textile engineer recently discharged from service as Captain, Coast Artillery. One year teaching experience and 3 years as safety inspector. Location, East; New England preferred. A-5174.

CANDIDATES FOR MEMBERSHIP

TO BE VOTED ON AFTER JANUARY 10, 1920

BELOW is a list of candidates who have filed applications since the date of the last issue of MECHANICAL ENGINEERING. These are arranged geographically. Applications for change of grading are also posted. The total number of applications received and listed below is 180.

The Membership Committee, and in turn the Council, urge the

members to scrutinize this list with care and advise the Secretary promptly of any objections to the candidates posted. All correspondence in this regard is strictly confidential. Unless objection is made to any of the candidates by January 10, 1920, and provided satisfactory replies have been received from the required number of references, they will be balloted upon by the Council.

NEW APPLICATIONS

Alabama

BECKLEY, LEROY W., Chief Draftsman, American Steel & Wire Co., Fairfield
REINERT, GEORGE L., Assistant Chief Draftsman, American Steel & Wire Co., Fairfield

Arkansas

PHILIPS, P. T., Chief Engineer, Power Equipment Co., Little Rock

California

POTTS, WILLIAM K., Mechanical Draftsman, State Department of Engineering, Sacramento
VOELKER, ALBERT A., Mechanical Engineer and Draftsman, American Beet Sugar Co., Oxnard

Colorado

BURLINGAME, CHARLES R., Instructor in Mechanical Engineering, University of Colorado, Boulder
CROFT, HUBER O., Estimator, Stearns-Rogers Mfg. Co., Denver
NEUBURY, ROBERT C., Engineer, Denver Gas & Electric Light Co., Denver

Connecticut

CLEARY, JAMES F., Machine Designer and Draftsman, Lake Torpedo Boat Co., Bridgeport
DUNN, ALBERT L., Tool Designer, Bullard Machine Tool Co., Bridgeport
HERZOG, RALPH W., Tool Equipment and Process Engineer, Winchester Repeating Arms Co., New Haven
PLATT, FRANK L., Mechanical Draftsman, Lake Torpedo Boat Co., Bridgeport
RAYMOND, RAYMOND P., Engineer, Columbia Graphophone Mfg. Co., Bridgeport
SBURLINO, PASCAL, Supervisor of Drafting, Columbia Graphophone Co., Bridgeport
YOUNG, WILLIAM R., Experimentalist, Columbia Graphophone Co., Bridgeport

Delaware

REIMER, FRANK H., Inspector, Bethlehem Shipbuilding Corp., Wilmington
STUNZI, JEAN J., Plant Study Engineer, E. I. du Pont de Nemours & Co., Wilmington

District of Columbia

McMANAMY, FRANK, Assistant Director, U. S. Railroad Administration, Washington
NORTON, WILLIAM T., Jr., Assistant Chief Engineering Branch, Motor Transport Corps, Washington
PFAHLER, FREDERICK P., Chief Mechanical Engineer, U. S. Railroad Administration, Washington

Illinois

BUYERS, DONALD E., Efficiency Engineer, International Harvester Co., Rock Falls
COOBAN, FRANK G., Sales Engineer, Gutta-Percha & Rubber Mfg. Co., Chicago
CROSS, HAROLD W., Sales Engineer, General Electric Co., Chicago
GREENLEE, WILLIAM B., Vice President and Treasurer, Greenlee Brass Co., Chicago
MAURER, CLAUDE N., 1st Lieut. Engineers, U. S. A., Woodstock
MERRIMAN, MERLE E., Staff Engineer, L. V. Estes, Inc., Chicago
O'CONNOR, JOHN F., Mechanical Engineer, W. H. Miner, Chicago
PLATE, HENRY D., Chief Draftsman, H. Mueller Mfg. Co., Decatur
ROGERS, HOWARD H., Treasurer, Williams, White & Co., Moline

Indiana

HOUGHTON, CARL R., Chief Draftsman, Connorsville Blower Co., Connorsville

Kansas

BELL, ALEXANDER H., Consulting Engineer, Empire Gas & Fuel Co., El Dorado
JONES, FORREST E., Assistant Superintendent Construction, Empire Gas & Fuel Co., El Dorado

Kentucky

WOLF, JULIUS, Assistant Professor of Steam Engineering, University of Kentucky, Lexington

Louisiana

MOODY, HOWARD N., Contractor, New Orleans

Maryland

CALDER, HORACE W., Assistant General Sales Manager, Poole Engineering & Machine Co., Baltimore
COCHRANE, WILLIAM F., Chief Engineer, U. S. Industrial Alcohol Co. and Subsidiaries, So. Baltimore
HARTLOVE, WALTER E., Machinery Inspector, United States Shipping Board, Emergency Fleet Corp., Baltimore
MUELLER, MAX W., Mechanical Engineer, Tungsten Products Co., Baltimore

Massachusetts

EVERY, LEON J., Assistant Master Mechanic, Saco-Loell Shops, Lowell
BENSON, HARRY F., Mechanical Engineer, Worthington Pump & Machinery Co., Holyoke
BLACKBURN, FELIX, Chief Draftsman, Cowan Truck Co., Holyoke
CROWLEY, CHARLES P., Mechanical Draftsman, Stone & Webster, Boston
DINGMAN, CHARLES F., Engineer, Flynt Building & Construction Co., Palmer
HODGDON, DONALD F., Charlestown
MARTIN, CHARLES H., President, Martin Rocking Fifth Wheel Co., Springfield
FIELD, MALCOLM F., Engineer Supervisor, U. S. Armory, Springfield
McBRIDE, WILLIAM J., Engineer, General Electric Co., Lynn
PIKE, LORENZO H., Factory Manager, Hygrade Lamp Co., Salem
RYAN, JAMES H., Mechanical Superintendent, Phelps Publishing Co., West Springfield
STEARNS, FREDERICK A., Instructor, Mechanical Engineer Department, Massachusetts Institute of Technology, Cambridge
SULLIVAN, EDWARD L., Combustion Engineer, Cochrane Harper & Co., Boston
WILLIS, CHARLES C., Department Head, Dennison Mfg. Co., Framingham
WOSTREL, JOHN F., Mechanical Engineer, Boston Belting Corp., Boston
WYSE, FRANCIS O., Assistant Engineer, The Blanchard Machine Co., Cambridge
ZWISLER, PERRY F., Assistant Superintendent of Equipment, Springfield Armory, Springfield

Michigan

FISHER, BOYD, Supervisor of Personnel, Aluminum Castings Co., Detroit
NICHOL, ALFRED H., Service Engineer, Diamond Power Specialty Co., Detroit
RABEZZANA, HECTOR, Experimental Engineer, Champion Ignition Co., Flint
SASS, HARVEY M., Mechanical Engineer, Leitelt Iron Works, Grand Rapids
SPENCE, PAULSEN, Sales Engineer, Crane Co., Detroit

Minnesota

WRIGHT, CHARLES R., Designer, Minneapolis Steel Co., Minneapolis

Missouri

STOWE, LOYD R., Manager, Stoker Department,

Laclede Christy Clay Products Co., St. Louis
PETERS, JOSEPH W., Manager, Specialties Department, Reeves & Skinner Machinery Co., St. Louis
WEBER, RUDOLPH L., Engineer of Equipment and Power, Board of Control, Kansas City Railways Co., Kansas City

Nebraska

SAXON, REUBEN B., Production Department, Hebb Motors Co., Havelock

New Jersey

AWOT, ADOLPH W., Draftsman, International Arms & Fuze Co., Bloomfield
GRIFFITH, JAMES E., Safety Engineer, E. I. du Pont de Nemours & Co., Carney's Point
HAMILTON, GEORGE G., Chief Engineer, National Hoist Engine Co., Harrison
HERNDON, PARRISH T., Fuel Oil Expert, Standard Oil Co., Elizabeth
MORRIS, DWIGHT B., Assistant Engineer, E. I. du Pont Co., Carney's Point
POTTER, CARL H., Superintendent, Brighton Mills, Passaic
PRATT, EVERARD S., Employment Manager, The Celluloid Co., Newark
RAMSEY, CLIFFORD H., President, Morrison Machine Co., Paterson
THOENE, FRED A., Assistant Superintendent of Power, Graselli Chemical Co., Graselli
WEINER, CHARLES M., Jr., Draftsman, Ingersoll Rand Co., Phillipsburg
WICKERS, ARTHUR L., Mechanical Engineer, The Laurel Co., Garfield
WRIGHT, DANIEL K., Engineering Department, General Electric Co., Harrison

New York

BATESOLE, DWIGHT E., Mechanical Engineer, The Norma Co. of America, New York
BURNS, ALAN E., Sales Engineer, Casey Hedges Boiler Co., New York
CALDER, ALEXANDER, Draftsman, New York Edison Co., New York
CASTRO-GAMBOA, FRANCISCO, Editorial Staff, International Engineering, McGraw Hill Co., New York (Re-election)
CLARK, WALTER J., Assistant Engineer, American Sugar Refining Co., Brooklyn
CLARK, WATSON G., Consulting Engineer, New York
CONROY, JOHN I., New York Manager, Malm Engineering Co., New York
COX, THOMAS R., Consulting Engineer, Dodge & Seymour, New York
DASSY, CHESTER F., Chief Machinist Mate, U. S. Navy, New York
FORGO, G. ERWIN, Assistant to Sales Manager, Fiske Bros. Refining Co., New York
HARVIE, KING A., Assistant Manager, Ford, Bacon & Davis, New York
HECKMAN, JAMES C., Consulting Engineer, Larkin Co., Buffalo
KNOWLES, HARVEY C., Supervising Engineer, American Chicle Co., Long Island City
LANGTON, JOHN, Consulting Engineer, New York
OBLER, DAVID M., Production Engineer, National Conduit & Cable Co., Hastings-on-Hudson
ROCKWELL, JOHN H., Lieut. U. S. S. "Delaware," New York
SCOTT, HERBERT VAN W., Appraisal Engineer, Ford, Bacon & Davis, New York
WARD, WILLIAM D., Manager, Atlantic Department, Pelton Water Wheel Co., New York
WATERMAN, DONALD F., Mechanical Designer, Brewster & Co., Long Island City
WHEELER, DUDLEY I., District Manager, Morse Chain Co., Ithaca
WURGEL, RENE A., Inspecting Engineer, Foamite Firefoam Co., New York

Ohio

BRUSSTAR, JAMES S., Assistant Mechanical Engineer, Cleveland Brass & Copper Mills, Cleveland
BRUCK, ALBERT G., Tool Designer, Cincinnati Milling Machine Co., Cincinnati
COCHRAN, ETHELBERT Z., Machine Tool Designer and Squad Leader, Niles Tool Works Co., Hamilton
CULLEN, EDWARD J., Chief Draftsman, Bailey Meter Co., Cleveland
DAVIS, OSCAR A., Chief Engineer, The Reeves Bros. Co., Alliance
DEEDS, DEAN D., Sales Manager, The Thew Automatic Shovel Co., Lorain
DEWEY, HARRY E., Salesman, Smith Gas Engineering Co., Dayton
EMERSON, MILTON, Inventory & Appraisal Staff, U. S. Ordnance, Cincinnati
GILLAM, WALLACE R., Mechanical Engineer, Wellman-Seaver-Morgan Co., Akron
GLAUCH, EDMUND S., Designer, Hooven Owens, Rentschler Co., Hamilton
GLEW, JAMES S., Assistant to General Manager, Rock Pearing Co., Toledo
GOLDRICK, ALBERT R., Manager, American Container Co., Cleveland
HARKENS, HENRY D., Designing Engineer, Youngstown Sheet & Tube Co., Youngstown
HARTMAN, GEORGE H., Squad Leader Die Design, Willys Overland Co., Toledo
HAYWARD, HENRY W., Engineer, Henry L. Doherty & Co., Toledo
THOMPSON, STEPHEN G., Chief Transportation Engineer, The White Co., Cleveland
QUEISSER, CHARLES F., General Superintendent, Electric Vacuum Cleaner Co., Cleveland

Oklahoma

DEBARR, EDWIN, Head of Department of Chemistry & Director School of Engineering, University of Oklahoma, Norman
RINEHART, ALFRED W., JR., Assistant Engineer, Lee C. Moore & Co., Tulsa

Pennsylvania

BECKER, HARRY N., Draftsman, Barrett Co., Philadelphia
COMFORT, GEORGE B., Assistant Works Manager, Miller Lock Co., Philadelphia
DOWNS, SYDNEY F., Fuel Department, Lehigh Coal & Navigation Co., Lansford
FINE, LEWIS, Chief Engineer, Budd Wheel Corp., Philadelphia
FRITSCH, ROBERT E., Assistant Engineer & Private Secretary, E. E. Brownell Engineering Co., Philadelphia
HARRISON, THOMAS L., Engineer, E. I. du Pont de Nemours & Co., Philadelphia
HOOPES, PENROSE R., Designer, Stokes & Smith Co., Philadelphia
KRATZ, RAYMOND C., Engineer, Day & Zimmerman, Inc., Philadelphia
MASCHE, ALBERT C., Sales Engineer and Estimator, Ehret Magnesia Mfg. Co., Philadelphia
NEUBER, GEORGE H., Instructor, Spring Garden Institute, Philadelphia
PAGE, ARVIN, Investigator in Research Department, New Jersey Zinc Co., Palmerton
ROSE, HAROLD MCN., Assistant Secretary, Pennsylvania Bituminous Mutual Assn., Huntingdon
SCHWARTZ, WALTER M., Vice-President and General Manager, Philadelphia Textile Machinery Co., Philadelphia
SINGLETON, PALMER C., Experimental Engineer, Bethlehem Steel Co., Bethlehem
WATSON, HAROLD E., Engineer, Link-Belt Co., Philadelphia
WRIGHT, THOMAS C., Representative, Standard Steel & Bearings, Inc., Philadelphia

Rhode Island

BATCHELDER, NELSON A., General Manager, B. B. & R. Knight, Inc., Providence

Texas

GODBOLD, LOUIS A., Chief Draftsman, Hughes Tool Co., Houston
TIPTON, WARREN A., Refinery Engineer, Durable Manufacturing Co., Dallas

Utah

CANNON, WILFORD Y., Assistant Consulting Engineer, Utah-Idaho Sugar Co., Salt Lake City

Virginia

LOVETTE, STANISLAUS A., Checker, N. & W. Railway Co., Roanoke

Wisconsin

ANDERSON, FRITZ A., Engineer and Superintendent, Burdick Cabinet Co., Milton
FRARY, HOBART D., Assistant Professor of Steam and Gas Engineering, University of Wisconsin, Madison

Australia

BRAGG, JAMES W., Governing Director, Gibson Battle & Co., Ltd., Sydney

Canada

COMBE, FRANK A., Chief Engineer for Canada, Babcock & Wilcox, Ltd., Montreal
WATSON, MCCLELLAND B., Director of Engineering, Central Technical School, Toronto

Dominican Republic

MULET, LORENZO M., Manager, Sucesores de Abarca, Santo Domingo

England

WANS, OSWALD, Chief of Internal Combustion Engine Department, Messrs. Ruston & Hornsby, Ltd., Lincoln

India

RAM SAMI, SOORPA N., Manager, Sandal Oil Factory, Bangalore

Japan

ABE, KEIICHI, Mechanical Engineer, Mitsubishi Zosen Kaisha, Ltd., Tokyo

Philippine Islands

FELICIANO, INDALECIO, Assistant Mechanical Superintendent, Manila Railroad Co., Caloocan, Rizal

CHANGE OF GRADING
PROMOTION FROM ASSOCIATE

Connecticut

REEVES, EDWARD H., Scientific Assistant, United States Public Health Service, New Haven

New York

CLOCK, ERNEST E., Chief Inspector, Fidelity & Casualty Co., New York
TAYLOR, WYATT W., Assistant Chief Engineer, American Can Co., New York

PROMOTION FROM ASSOCIATE-MEMBER

Illinois

STARK, JULIAN E., Chief Draftsman, Crane Co., Chicago

Massachusetts

SCHOOFF, ARTHUR W., Gage Engineer, Greenfield Tap & Die Corp., Greenfield

Missouri

BRYAN, WALTER E., Superintendent Power Stations, United Railway Co., St. Louis

New York

BROWN, JAMES S., Mechanical Engineer, N. Y. District Claims Board, U. S. Ordnance Department, New York

Pennsylvania

COOPER, DAVID M., Mechanical Engineer & Draftsman, National Metal Molding Co., Ambridge
SCHULZ, GUSTAVE E., Organizer, H. K. Hathaway, Philadelphia
TALIAFERRO, R. RYLAND, Sales Engineer, Carrier Engineering Corp., Philadelphia
VEENSCHOTEN, VINCENT V., Northern Equipment Co., Erie

Rhode Island

FISHER, HOWARD C., General Manager, Central Construction Co., Saylesville

South Africa

WEAVER, WILLIAM G., Lecturer on Mechanical Engineering, University of Cape Town, Cape Town

PROMOTION FROM JUNIOR

Illinois

LEVALLY, JOHN R., Sales Engineer, Locomotive Superheater Co., Chicago

Kansas

SWIGGETT, CLAYTON A., Superintendent, Lehigh Portland Cement Co., Iola

Massachusetts

DEAN, DION K., District Sales Manager, Alberger Pump & Condenser Co., Boston
NEWMAN, WILLIAM C., General Electric Co., Lynn

Michigan

BAIRD, LYMAN S., Production Manager, Sunnyside Electric Co., Detroit
BROCK, CLARENCE A., Draftsman, Ford Motor Co., Highland Park

New York

CHUTE, STANLEY J., Engineer, The Griscom-Russell Co., New York
EDWARDS, HAROLD H., Engineer, Construction Department, Swift & Co., New York
HUTCHINS, HARRY C., Engineer, Richmond Levering & Co., New York (Reinstatement)
LAWRENCE, JOHN H., Assistant Mechanical Engineer, The New York Edison Co., New York
MAUGER, DAVID N., Assistant to Vice President, The Babcock & Wilcox Co., New York

Ohio

NORRIS, DONALD G., Assistant Superintendent, The Hart Manufacturing Co., Cleveland
SHAFFER, LAYTON S., Chief Engineer, Ohio Locomotive Crane Co., Bucyrus

Oregon

GRAF, SAMUEL H., Professor of Experimental Engineering, Oregon State Agricultural College, Corvallis

Pennsylvania

FISLER, A. CARL, Draftsman, U. S. Shipping Board, Emergency Fleet Corp., Philadelphia
MULHERON, WILLIAM, Assistant Chief Engineer, Merchant Shipbuilding Corp., Chester
SWAIN, PHILIP W., Mechanical Engineer, The Franklin Manufacturing Co., Franklin

Vermont

KEATOR, SIMON P., Office Manager, Vermont Farm Machine Co., Bellows Falls

Cuba

TURNER, WILLIAM C., Southern Sales Corp., Havana

SUMMARY SHOWING AVERAGE AGE AND POSITIONS OF APPLICANTS ON BALLOT CLOSING NOVEMBER 19, 1919

Average age of applicants	
Members	37
Associates	40
Associate-Members	32
Juniors	24
Calculator	1
Chief Engineers	10
Combustion Engineer	1
Construction Engineers	2
Designers	8
Draftsmen	7
Chief Draftsmen	3
Efficiency Engineer	1
Executives (Pres., V. Pres., Secy., Treas., Mgrs.)	18
Foremen	3
Industrial Engineers	3
Inspector	1
Instructors	3
Master Mechanics	2
Mechanical Engineers	19
Asst. Mechanical Engineers	4
Production Engineers	2
Safety Engineers	2
Sales Engineers	6
Sales Managers	2
Superintendents	7
Asst. Superintendents	4
Supervisors	2
Works Engineers	3
Miscellaneous	32

UNITED STATES GOVERNMENT SERVICE

Captain	2
1st Lieut.	2
Ensign	2

SUMMARY

New Applications	148
Applications for change of grading	
Promotion from Associate	3
Promotion from Associate-Member	10
Promotion from Junior	19
Total	180

ANNUAL REPORTS OF COMMITTEES

THE Annual Reports of the Standing Committees of the Society on Finance, Meetings and Program, Membership, Publication and Papers, Local Sections, Constitution and By-Laws, Library, Research and Standardization, were all received by the Council at its meeting in Indianapolis, on October 24, and ordered printed and distributed to the membership prior to the Annual Meeting.

On account of the printing situation, it has been impossible to carry out the custom of printing these reports in MECHANICAL ENGINEERING, but sufficient copies were prepared by photographic process and distributed at the Annual Business Meeting on December 3. Any members desiring copies may obtain them on request.

The report of the Finance Committee, with the statement of accounts, is, however, being printed below, because it is felt that recommendations of appropriations and expenditures are always of sufficient importance to warrant distribution to the entire membership.

Report of Finance Committee

The Finance Committee reports that the income of the Society for the year ending September 30, 1919, was \$332,942.46. After reserving \$19,000 for obligations undertaken but not yet completed, the total expenditures chargeable to income were \$330,855.50, leaving an excess of income over expenditures of \$2,086.96.

Based on a membership of 10,200 (the average of the total membership on October 1, 1918, and that on October 1, 1919), the average income of the Society per member for the fiscal year just closed is tabulated below. The corresponding income for the preceding year is included for comparison.

AVERAGE INCOME PER MEMBER

	1917-1918	1918-1919
Membership Dues	\$14.06	\$13.56
Sales — Gross Receipts	1.61	3.12
Advertising	9.31	11.38
Interest and Discount	.50	.94
Initiation Fees	1.02 ¹	3.64
	\$26.50	\$32.64

¹ Represents one-half income.

Based on the same average membership, the expenditures of the Society per member for the fiscal year just closed are also given below, together with the corresponding expenditures for the previous year for comparison.

AVERAGE EXPENDITURE PER MEMBER

	1917-1918	1918-1919
Meetings, Annual and Spring.....	\$1.41	\$1.45
Publications:		
Journal	\$7.20	\$8.78
Condensed Catalogues	2.19	2.42
Transactions	2.22	2.50
Year Book	.79	.96
Engineering Index Monthly		1.01
	\$12.49	\$15.67
Membership and Increase of Membership ..	\$2.09	\$1.48
Office Administration	3.00	3.94
Upkeep of Headquarters	.32	.69
Employment Bulletin	.33	.23
Government Employment Work	.20	
Aims and Organization		.62
United Engineering Society:		
Assessment to U. E. S.	\$0.55	\$0.51
Library	.46	.45
Engineering Council	.42	.38
	\$1.43	\$1.34
Local Sections	1.59	1.97
Council, Contingencies, Mileage	.52	1.66
Student Branches	.07	.04
Cost of Sales (Publications, Pamphlets, etc.)	.99	1.69

Engineering Committees (Standardization, Research, Boiler Code, Power Test Code, etc.)	.93	1.36
Other Activities	.28	.29
TOTAL.....	\$25.65	\$32.43

The Budget Appropriation recommended by this committee for the year 1919-1920, and approved by the Council at Indianapolis on October 24, 1919, is as follows. The estimated income is \$383,000.

RECOMMENDED EXPENDITURES FOR 1919-1920

Council and Contingencies	\$10,000
Office Administration	40,000
Assessments	25,000
Meetings — General	15,700
Publications	177,600
Local Sections	23,000
Membership	6,700
Increase of Membership	9,500
Research	5,000
Professional Committees	10,000
House	3,500
Student Branches	1,500
Sales	21,000
Miscellaneous	500
Unexpected Current Expenditures (5 per cent of Income)	11,500
	\$360,500
Appropriated to Reserve	22,500
	\$383,000

The foregoing appropriations do not in all cases fully meet requests made by the different committees, but as the amount represents a very substantial increase over the appropriations one year ago (about \$104,000), your Finance Committee feels that there should be no increased allowance at this time.

Following the budget's approval the committee can, and will be in a better position to recommend revisions either prior to, or at, the Council Meeting in December.

Appended are the reports of the accounts of the Society as shown in the books for the fiscal year ended September 30, 1919.

Respectfully submitted,

W. E. SYMONS, *Chairman*,
A. E. FORSTALL, *Vice-Chairman*,
ALEX DOW,
GEORGE M. FORREST,
FRANK E. LAW.
Finance Committee.

REPORT OF ACCOUNTANTS

FINANCE COMMITTEE,

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

DEAR SIRS:

In accordance with your instructions, we have examined the books and accounts of The American Society of Mechanical Engineers for the twelve months ended September 30, 1919.

The results of this examination are set forth in the three exhibits, attached hereto, as follows:

Exhibit A Balance Sheet, September 30, 1919.

Exhibit B Income and Expenses for the twelve months ended September 30, 1919.

Exhibit C Receipts and Disbursements for the twelve months ended September 30, 1919.

We certify that, in our opinion, the accompanying balance sheet is a true exhibit of its financial condition as of September 30, 1919, and that the attached statements of Income and Expenses, and Receipts and Disbursements, are correct.

Respectfully submitted,

(Signed) WM. J. STRUSS & Co.,
Certified Public Accountants.

EXHIBIT A

SEPTEMBER 30, 1919, BALANCE SHEET

ASSETS

Society's one-quarter interest in the Building, Land and Real Estate Equipment
(No. 25 to No. 33 West 39th Street) ..

\$486,792.79

Library Books	\$13,000.00	
Furniture and Fixtures	5,000.00	
		18,000.00
Stores, including plates and finished publications		29,307.11
Engineering Index		10,000.00
Trust Fund Investment:		
New York City 3½%, 1954 (par \$45,000)	\$39,696.81	
St. L., Peoria & N. W. 1st 5%, 1948 (par \$10,000)	10,613.89	
United New Jersey Canal Co. (par \$1,000)	970.00	
Cash in Banks representing Trust Funds	7,518.17	
		58,798.87
Liquid Assets:		
Liberty Bonds	55,000.00	
United Engineering Society	10,000.00	
Accounts Receivable:		
Members' Dues	15,008.10	
Initiation Fees	14,712.50	
Sales of Publications, Advertising, etc.	58,112.53	
		87,833.13
Advance Payments		4,573.98
Cash: In banks for general purposes	5,535.87	
Petty Cash Fund	1,500.00	
		7,035.87
		\$767,341.75

LIABILITIES

Trust Funds:		
Life Membership Fund	\$46,102.81	
Library Development Fund	4,902.71	
Week's Legacy Fund	1,957.00	
Melville Fund	1,127.36	
Hunt Memorial Fund	208.99	
Juniors' and Students' Prize Fund	2,000.00	
C. T. Main Award Fund	2,500.00	
		58,798.87
Dues paid in advance		2,241.06
Initiation Fees uncollected		14,712.50
Replacement Fund		1,163.18
Accounts Payable		5,244.12
Unappropriated Revenue	30,392.46	
Unexpended Appropriations — Excess	6,527.48	
		23,864.98
Capital Investment	\$514,792.79	
Surplus and Reserve	146,524.25	
		661,317.04
		\$767,341.75

EXHIBIT B

INCOME AND EXPENSES FOR THE TWELVE MONTHS ENDED
SEPTEMBER 30, 1919

INCOME	
Membership Dues	\$138,334.58
Sales — Gross Receipts	31,804.24
Advertising	116,030.08
Interest and Discount	9,643.56
Initiation Fees	37,130.00
TOTAL	\$332,942.46

EXPENSES

Finance Committee:	
Office Administration	\$40,160.82
Occupancy Building	5,244.04

Engineering Council	3,899.97
Library	1,999.99
Wages	2,625.01
	\$53,929.83
Membership Committee	5,846.89
Council:	
Contingencies	13,176.28
Mileage	4,120.00
Committee Miscellaneous ..	9,060.28
Employment Bulletin	2,334.32
	28,690.88
Increase of Membership Committee	9,212.45
House Committee	7,002.09
Section Committee	20,141.10
Meetings Committee	14,741.28
Publication Committee:	
Journal Text	\$47,237.69
Journal Advertising	39,925.36
Journal Development	2,500.00
Condensed Catalog	24,684.58
Transactions and Revises ..	25,417.46
Engineering Index	10,342.10
Year Book	9,785.66
	159,892.85
Aims and Organization Committee	6,323.64
Research Committee	4,416.64
Sales Expenditures	17,240.28
Hutton Memorial	2,500.00
Other Activities	917.57

TOTAL ¹ \$330,855.50

	\$2,086.96
Unexpended Appropriation, 1917-1918 ..	2,778.02
Excess of Income over Expenses	\$4,864.98

¹ The items of total expenses includes \$19,000 not yet paid to complete work already in process and chargeable to this year's activities.

EXHIBIT C

RECEIPTS AND DISBURSEMENTS FOR THE TWELVE MONTHS ENDED
SEPTEMBER 30, 1919

RECEIPTS	
Membership Dues	\$135,829.02
Initiation Fees	36,670.00
Membership Dues paid in advance	2,244.98
Sales of Publications, Badges, Advertising, etc.	136,852.26
Interest	7,683.08
United Engineering Society	5,000.00
City of East Orange Loan Certificate	21,371.95
C. T. Main Award Fund	1,000.00
	\$346,651.29

Cash on hand and in banks:	
General and Trust Funds, September 30, 1918	23,779.07
	\$375,430.36

DISBURSEMENTS	
Disbursements for General Purposes	\$325,876.32
Liberty Bonds	25,000.00
Engineering Index	10,000.00
	\$360,876.32

Cash on hand and in banks:	
General and Trust Funds, September 30, 1919	14,554.04
	375,430.36

A. S. M. E. YEAR BOOK—1920

Important! In order that changes of address may be incorporated in the 1920 Year Book, it is necessary that such changes be received at headquarters *not later than January 2, 1920.*